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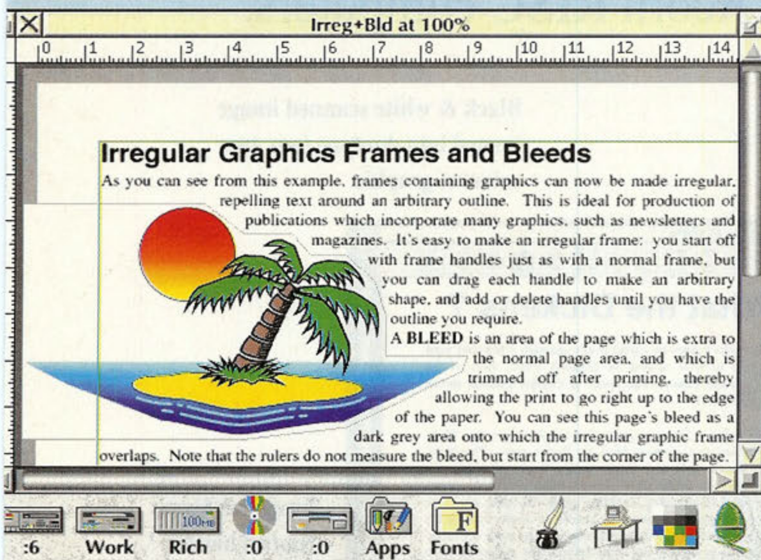
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- Named master pages now with page bleed control
- Full control of PostScript separations - screen angle, type, density, crop and registrations marks etc
- Supports multiple device profiles for separating to different printers
- Guide frames and page grid with snap-to function for frames and text
- Irregular graphics frames with text flow around

CONTENTS

57 Impression Publisher put to the test





28 Queue The Music with our coverdisc



73 How useful are portable computers in schools?

REGULARS

HANDS ON

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Editor Mark Moxon
Deputy Editor David Matthewman
Production Editor Judith Chapman
Art Editor Carl Fox
Contributing editors
Ian Burley (News) Steve Atherton (Games) Jack Kreindler (Graphics) David Dade (Comms) Paul Wheatley (Public Domain) Geoff Preston (Education) Steve Powell (DTP)

Advertisement Managers
Emma Barr & Lisa Bracewell
Ad Production Wendy Binnersley
Marketing Manager Lucy Oliver
Production Manager Sandra Childs
Circulation Director David Wren
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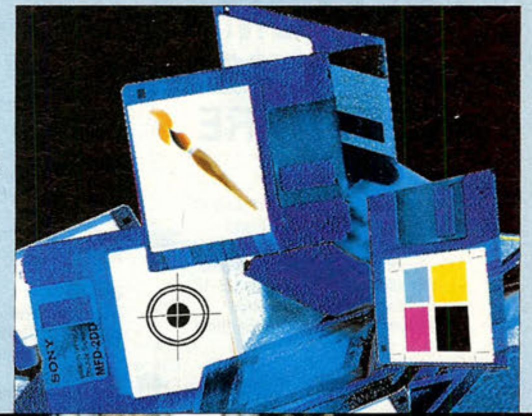
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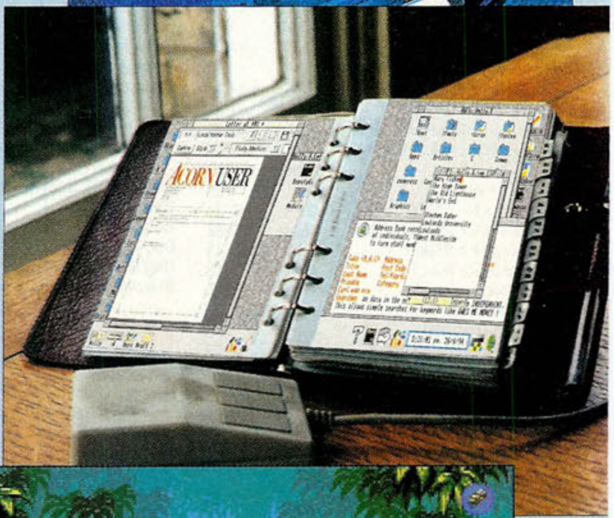
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FEATURES

REVIEWS



35 The Public Domain explored in our 11-page special



69 Almanac 3: can it organise your life?



63 Flashback, the latest 16-bit conversion

Next issue on sale 16 June

Editor's letter

Just watch people's eyes light up when they discover for the first time that the Public Domain contains vast resources of totally free software. It's like Christmas come early.

The Public Domain has come a long way since the early days of the Archimedes. Thanks, in the main, to the dedication of those who run PD libraries, and the large take-up of the Internet by Acorn users as a means of communication, the Public Domain has exploded into a vital part of the Acorn scene.

Although it is almost an impossible task to cover the Public Domain in one issue – and that's why we have a monthly PD column – the section starting on page 35 will, at least, point you in the right direction. Never say we don't give you anything for free...

Mark Moxon, Editor

ICS

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SOFTWARE

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Ovation *RISC* **£79**
Overload *Clares* £13
Oxford Reading Tree Stage 2 Story Books, age 5-7 *Sherston* vo £9
Oxford Reading Tree Stage 2 Talking Stories, age 5-7 *Sherston* £37

Padlock *ICS* £10
– site licence £30
Pandemonium, KS1,2 *Topologika* £34
Pandora's Box *Fourth Dim* £17
Pappus *Computer Tutorial* £17
Payroll Manager *Silicon* £79
PC Emulator 1.8 *Acorn* £92
PDT *Oak* £149
PenDown, KS1-3 *Longman* £45
PenDown Etoiles, KS3,4 *Longman* £49
PenDown Outline Fonts *Longman* £17
PenDown Plus, KS2-4 *Longman* £67
Personal Accounts V2 *Apricote* £28
Perspectives *TechSoft* £54
Phonic Games *Fisher-Marriott* £28
Photobase – Landscapes *Longman* £POA
Photodesk *Spacetech* £165
Photopia *CIS* £POA
Photo Touch *Oregan* £68
Picture Book, age 2-5 *Triple R* £16
Picture It! *Appian* £29
– Topic discs each £9
PIMS *Longman* £339
PinPoint 2, KS3,4 *Longman* £79
– site licence £340
PinPoint 2 Datafile, KS3,4 – 1851 Census, Diet and Nutrition, Far Away Places, Kartei - The German Questionnaire, Second World War, Solar System each *Longman* £13
PipeDream 3 *Colton* £69
PipeDream 4 *Colton* £85
PipeDriver Dot 1 *ICS* £10
Pipe Mania *Empire* £18
Pirate, age 8-14 *Chalksoft* £19
Placard *ICS* £10
– site licence £30

NO CHARGE FOR CREDIT CARDS

Plague Planet *Alpine* £13
PlayBack *RISC* £17
Play It Again Sam 1 *Superior* £19
Play It Again Sam 2 *Superior* £19
Play It Again Sam 3 *Superior* £19
Plot *Clares* £63
Podd, KS1,2 *ESM* £25
Podd – Welsh, KS1,2 *ESM* £40
Polyominoes *Topologika* £24
Populous *Krisalis* £20
Poster *4mation* £74
PowerROUTER *Silicon* £159
– education price £149
Powermonger *Krisalis* £22
Prehistoric Animals, sprites *Micro Studio* £16
Premier *Circle* £71
– DataBase *Circle* £25
– WordProc *Circle* £25
Premier Manager *Gremlin* £21
Presenter GTi *Lingenuity* £66
Primary Nature *Oak* £44
PrimeArt, KS1-4 *Minerva* £58
PrimeMover, KS2-4 *Minerva* £69
PrimeSolver, KS1-4 *Minerva* £74
PrimeWord, KS2-4 *Minerva* £51
Printer Drivers, RISC OS:
Canon BubbleJet, Canon LBP, Canon PJ1080, ColourCel, Epson JX, Epson ESC-P2, HP, Integrex 132 – each *Oak* £15
Deskjet 500C, Epson / Star colour – each *RISC* £15
ProDrivers: Canon LBP8, Epson ESC-P2, HP Colourjet – each *Oak* £33
TurboDrivers: Canon, Epson Stylus 800, HP – each *CC* £42
Printer Spooler *Oak* £68
ProArtisan 2 *Clares* £102
ProArtisan 24 *Clares* £POA
ProArtisan 2CD *Clares* £129
ProCAD, KS4 *Minerva* £450
Programming in ANSI Standard C on the Archimedes *Sigma* vo £15
Prophet (requires 2 Mb) *Apricote* £145
Prophet Entry Level *Apricote* £8
ProSHEET *Silicon* £39
Protext *Arnor* £117
Provocator *Computer Tutorial* £15
Puncman 1 and 2 *Chalksoft* £17
Puncman 3 and 4 *Chalksoft* £17
Puncman 5 to 7 *Chalksoft* £18
Punctuate *Xavier* £31
Punctuate! *Topologika* £20

QDBug *Vertical Twist* £68
QPaint *CIS* £POA
Quark *Oregan* £22
Quest for Gold *Krisalis* £19
QuicKey *ICS* £10
– site licence £30

Raw Power II *GamesWare* £16
Really Useful CD Rom Vol.2 *APA* £48
Real McCoy 2 *Fourth Dim* £22
Real McCoy 3 *Fourth Dim* £22
Real McCoy 4 *Fourth Dim* £22

ICS
051-625 1006

Recall, age 8-13 *Sherston* £37
Recordz *Colton* £97
Redshift *Minerva* £11
RemoteFS Parallel Port *Atomwide* £49
RemoteFS Serial Port *Atomwide* £49
Render Bender 2 *Clares* £41
Rephorm *Oak* £47
Report Writer KS1/2 *Creative* £48
Report Writer KS3/4 *Creative* £48
Repro *Oak* £46
Repton 3 *Superior* £19

Resultz *Colton* **£97**
– secondary site licence £470
Revelation *Krisalis* £9
Revelation 1, KS2-4 *Longman* £33
Revelation 2, KS2-4 *Longman* £65
Revelation 2 CD Rom *Longman* £90
Revelation ImagePro *Longman* £125
Reversals *Chalksoft* £17
Rhapsody 2 *Clares* £44
Rhapsody 3 *Clares* £75
Rhythm-Bed *Clares* £38
RhythmBox II, age 8+ *EMR* £34
RiscBASIC Compiler *Silicon* £77
RiscForth Compiler *Silicon* £77
RISC OS 3 Applications Upgrade *Acorn* £10
RISC OS 3 First Steps *Dabs* vo £15
RISC OS 3 Programmer's Reference Manual *Acorn* vo £99
RISC OS Style Guide *Acorn* vo £13
RISC OS User Guide *Acorn* vo £22
Risc PC 600 Technical Reference Manual *Acorn* vo £POA
Risc PC 600 Welcome Guide *Acorn* vo £8
RoboLogo *Silicon* £38
Round the World Yacht Race, age 9+ *Storm* £27

Saloon Cars Deluxe *Fourth Dim* £24
– Deluxe Extra Courses £15
Saxon Life, KS2 *Oak* £42
S-Base 2 Developer *Longman* £189
S-Base 2 Developer Plus *Longman* £345
S-Base 2 Personal *Longman* £109
S-Base Network *Longman* £254

Schedule *Acorn* **£18**
Schema 2 *Clares* £95
Science, drawfiles *Micro Studio* £23
Score Draw *Clares* £45
Scorewriter PMS Desktop, age 12+ *EMR* £147
ScreenPlay *Widgit* £35
Search and Rescue, age 9+ *Storm* £26
Sea Rescue, age 7-9 *Sherston* £24
Seashore Guide, drawfiles *Micro Studio* £16
Seelinks – Ourselves, KS1.2 *ESM* £30
Seelinks – Pond Watch, KS2 *ESM* £37
Seelinks – Tourism, KS3 *ESM* £55
Seelinks – Transport, KS2 *ESM* £37
Sellardore Tales, age 10-12 *Sherston* £24
Sensible Soccer *Renegade* £19
Serenade *Clares* £84
Serpents *CIS* £POA
Settlement, KS3 *ESM* £33
ShapeFX *Data Store* £10
ShareHolder *Silicon* £102
– education price £79
ShareHolder Professional *Silicon* £164
Shares *Apricote* £33
ShowPage *CC* £139
Shylock Gnomes, age 10-15 *Selective* £16
Sibelius 6 *Sibelius* £158
Sibelius 7 *Sibelius* £789
– education and amateur price £495
Sim City *Krisalis* £22
Simon the Sorcerer *GamesWare* £29
SkyHunter, KS2 *Longman* £22
Sleuth *RISC* £41
Small *Virgo* £19
smArt *4mation* £46
smArt Aliens, Animals, Dinosaurs, Egypt, Europe†, Faces*, Fantasy, Fashion, Fiddles & Drums, Heraldry, Homes*, Leisure*, Look Smart, Smartoons, Trees and Gardens
*English/French/German/Spanish/Welsh;

For ordering details please turn to page 4

ICS

051-625 1006

†English/French/German; please specify each — 4mation £15
smArtFiler — 4mation £32
smArt Modern Languages — 4mation £19
Smudge the Spaniel, age 4-8 — Storm £20
Snippet — 4mation £32
Soapbox — Xavier £34
SolidCAD — Silicon £77
SolidsRender — Silicon £77
SolidTools — Silicon £204
– education price £194
Somerset Talking Computer Project Learning Materials — Longman vo £29
SongBook, age 3-10 — EMR £24
Sound Engineer, age 12+ — EMR £59
Sound-FX Maker — CIS £POA
Sound-FX Maker & Photopia — CIS £POA
Sounds & Rhymes — Xavier £29
Space City, age 7-9 — Sherston £24
SparkFS — David Pilling £20
Sparkle — Morley £59
Special — ICS £10
– site licence £30
Speech! — Superior £18
Spell — David Pilling £9
Spelling week-by-week — Chalksoft £20
Spex — Aspex £98
Spheres of Chaos — Matt Black £19
Splash, age 7-11 — Sherston £17
Splice — Oak £28
Split an Image, age 7-16 — Sherston £16
Spoken Word — Wyddfa £18
Spoken Word Welsh (Gair ar Lafar) — Wyddfa £18
Spooler (Clares) — Clares £12
Spooler (Comp Tut) — Computer Tutorial £9
Sporting Triangles — CDS £19
SportsDay — Selective £20
SportsPeople — Selective £20
Sprite Editor — Computer Tutorial £17
SpySnatcher — Topologika £12
Square Route — Computer Eyes £16
Squirrel 2 — Digital Services £127
– site licence £545
Squirrel C Developer's Toolkit — Digital Services £97
Starspell Plus — Fisher-Marriott £19
StartWrite — Icon £55
Stig of the Dump, age 9-13 — Sherston £23
StockPack — Topologika £30
StoryBook, age 3-10 — EMR £59
Striker — GamesWare £21
StrongED 3 — Stallion £22
Studio24Plus Version 2, age 11+ — EMR £149
Studio24Plus Version 3, age 12+ — EMR £210
Stunt Racer 2000 — Fourth £24
SUMthing — Resource £24
SuperDump — Silicon £20
Superior Golf — Superior £14
SuperPlot — Silicon £20
Swiv — Krisalis £9

TABS — Aspex £95
Talisman — Minerva £9
Talking PenDown, KS1-3 — Longman £53
Talking Pictures — Wyddfa £18
Talking Pictures Welsh (Lluniau Llafar) — Wyddfa £18
Talking Rhymes — Topologika £37
Talking Stories – Gwen at the Fair, Gwen goes to School, Gwen's Nose, Gwen's Tummy each — Wyddfa £17
Target Maths, age 6-13 — Triple R £16
Technodream (Nevryon 2) — Superior £19
TechWriter — Icon £149
Thinklink — Xavier £29
ThinkSheet — Fisher-Marriott £38
Thundermonk — Minerva £9
Tiles — Brain Games £19
Timeshare — Fisher-Marriott £19
Timetabler — Minerva £549
Time Detectives ... The Victorians, age 7-11 — Sherston £37
Time Traveller, KS2 — ESM £39
– Britain Since the 1930s, KS2 £28
– Create Your Own Timelines, KS2,3 £37
– Expansion, Trade and Industry, KS3 £37
– Making of the United Kingdom, KS3 £37
– Medieval Realms, KS3 £37
– Tudor and Stuart Times, KS2 £33
– The Victorians, KS2 £30
TinyDraw/TinyLogo — Topologika £25
TinyPuzzle — Topologika £20
Titler — Clares £84
Toolkit Plus — Clares £38
Tools Graphics, drawfiles — Micro Studio £23
Topographer — Clares £61
Touch Type — Iota £38
– site licence for 10 £137
Trace — David Pilling £9
Tracer — Midnight £46
Transfer2 — Apricote £16
Transport, drawfiles — Micro Studio £25
Turbo Type — CIS £POA
Turbo Type, Sound-FX Maker, E-Numix — CIS £POA
Twain Canon IX incl Scan-Light Professional — David Pilling £16
Twain Epson GT8000, 6500 — David Pilling £16
Twain HP Scanjet II, IIc, IIcx — David Pilling £16
Tween — Oak £28
Twilight — Really Good £12
TWO (Task and Window Organiser) — ICS £10
– site licence £30
TypeStudio — RISC £38

Utility Disc 1 — Data Store £8
Utility Disc 2 — Data Store £13
Utility Disc 3 — Data Store £7
Utility Collection — Data Store £21

Vector — 4mation £75
Victorians, age 7-11 — Sherston £POA
View»Mac 3 — Human £65
– Arc/Mac Cable — Human £24
Viewpoints, age 7-11 — Sherston £36
Viking Invaders — Oak £44
Virtual Golf — Fourth Dim £23
Visual Backup — Dabhand £39
Vox Box — Clares £42

Waiter — Digital Services £35
Waterloo (not OS 3.1) — Turcan £19
Whale Facts — Topologika £20
Wordbank — Topologika £20
Words and Pictures — Chalksoft £19
WordWorks — CC £36
Wordz — Colton **£75**
World Geography Maps, draw — Micro Studio £23
WorldMaker, KS3,4 — ESM £51
World Map Study, KS3,4 — ESM £64
World Wildlife, sprites — Micro Studio £16
WorraCAD — Oak £65
Worst Witch, age 7-10 — Sherston £22
Wortgut — Fabis £19

Xenon 2 — GamesWare £19

Yacht 2 — Computer Tutorial £49
Yacht 7 — Computer Tutorial £94

Zarch — Superior £14
Zelanites (not OS 3) — Micro Power £15
Zool — Gremlin £18

HARDWARE

COMPUTERS . . .

A3010 Action Pack — Acorn £335
A3010 Learning Curve System — Acorn £599
A3020 FD System — Acorn £650
A3020 HD60 System — Acorn £775
A4 2M FD System — Acorn £1350
A4 4M HD60 System — Acorn £1650
A4 Battery Pack — Acorn £53
A4 Shoulder Bag — Acorn £37
A5000 2M HD210 Multiscan System — Acorn £1225
A5000 2M HD210 Multiscan System with AKF50 monitor, limited offer — Acorn £1255
Pocket Book — Acorn £169
Pocket Book Class Pack — Acorn £1599
Pocket Book Parallel Link — Acorn £26

A FREE COLOUR TELEVISION WITH EVERY A3010 ?
PLEASE ASK FOR DETAILS

Risc PC 600 with 1 year's on-site support
– 2M HD210 14" Monitor — Acorn £1245
– 2M HD210 17" Monitor — Acorn £1645
– 5M HD210 14" Monitor — Acorn £1395
– 5M HD210 17" Monitor — Acorn £1795
– 9M HD210 14" Monitor — Acorn £1695
– 9M HD210 17" Monitor — Acorn £2095

Please call for latest pricing on the Risc PC range, and news of our removable IDE hard disc upgrades

MEMORY . . .

Fitting extra unless otherwise stated
† Fitting fairly easy ‡ Fitting needs expertise

A3000 1-2 Mb † — IFEL £59
A3000 1-4 Mb † — IFEL £115
A3010 1-2 Mb £45
A3020 / A4000 2-4 Mb † £88
A310 1-2 Mb soldered ‡ — IFEL £90
– as above + MEMC1a £119
– as above + MEMC1a + fitting £149
A310 4 Mb soldered + MEMC1a ‡ — IFEL £160
– as above + fitting £189
A5000 2-4 Mb † — IFEL £89
A5000 2-8 Mb including fitting — Atomwide £500
A5000 4-8 Mb including fitting — Atomwide £391
A540 4 Mb † — Acorn £238
Risc PC 1 Mb VRAM — Acorn £127
Risc PC 2 Mb VRAM — Acorn £195
SIMM 2 Mb 32 bit £POA
SIMM 4 Mb 32 bit £POA
SIMM 8 Mb 32 bit £POA
SIMM 16 Mb 32 bit £POA

SCANNERS, DIGITISERS . . .

Colour Converter — Lindis £145
Eagle M2 — Wild Vision £289
FaxScan — Spacetech £94
GreyHawk — Wild Vision £98
Handipad — TechSoft £193
Hawk V9 MkII Hardware Dithered — Wild Vision £195
HiVision colour — HCCS
– A3000 External £157
– A3000/3010/3020/4000 internal £144
– A5000/400/300 £144
iImage (Sharp JX-100) — Irlam
– for A5000 £490
– for other computers £589
Image Scanner — Iota £383
– Colour Upgrade — Iota £239
– Fast Parallel Card — Iota £98
Pineapple Colour Video Digitiser — Pineapple £195
– A3000 boxed — Pineapple £230
ProImage (Epson GT6000) — Irlam
– for A5000 £989
– for other computers £1089
Scan-Light A4 — CC £277
Scan-Light 256 — CC £185
– A3000 External — CC £190
– A3000 internal — CC £190
Scan-Light Professional — CC £550
– as above + SCSI interface — CC £699
Scan-Light Video — CC £208
Scan-Light A3000/A4000 — CC £208
Spectra — RISC
– A3000 Series / A4000 Internal £545
– A3000 External £555
– Archimedes / A5000 £545
Vision colour — HCCS
– A3000/3010/3020/4000 internal £96
– A3000 external £109
– A5000/400/300 £96

PRINTERS . . .

A4-1200/1 Direct Drive Laser Printer — Calligraph £989
Bubble Jet BJ-10sx — Canon £175
Bubble Jet BJ-10sx + TurboDriver — Canon/CC £219
Bubble Jet BJ-230 — Canon £315
Bubble Jet BJ-300 — Canon £325
Bubble Jet BJ-330 — Canon £380
Bubble Jet BJC-600 — Canon £425
Bubble Jet BJC-600 + TurboDriver — Canon/CC **£465**
Bubble Jet BJC-800 + TurboDriver — Canon/CC £1219
Bubble Jet BJC-800 Ink Cartridge — Canon
– Black £16
– Cyan / Magenta / Yellow each £19
DeskJet 500C — Hewlett-Packard £279
DeskJet 510 — Hewlett-Packard £225
DeskJet 550C — Hewlett-Packard £445
DeskJet 560 — Hewlett-Packard £415
Laser Direct HiRes4 — CC £748
– 250-sheet Paper Cassette £99
Laser Direct HiRes8 — CC £1049
Laser Direct HiRes Board — CC £325

SUNDRY . . .

486 PC Card 25 MHz 4 Mb — Aleph One £514
486 PC Card 25 MHz Bare — Aleph One £357
486 PC Card 50 MHz 4 Mb — Aleph One £591
486 PC Card 50 MHz Bare — Aleph One £434
4-slot 4-layer Backplane — IFEL £52
5315 Monitor — Aydin £425
A300/400 Fan kit — ICS £15
A3000 Case for Expansion Card — HCCS £19
A3000 Expansion Box — Wild Vision £135
A3000 Serial Upgrade — Acorn £21
A5000 Fitting Kit for second hard disc — ICS £15
AnDi Oddule — Baildon £39
Arckey Function Key Strip Holder — ICS vo £3
– pack of 4 vo £10
ArcNET — ACS £69
ARM3 ‡ — Aleph One/IFEL £165
Arm_Stick — Arm_Tech £28
Case Upgrade only for Risc PC 600 2M and 5M — Acorn £98
ColourBurst — State £374
ColourCard Gold — Wild Vision £225
– A3000 External — Wild Vision £225
Dongle Dangle with screw fittings — ICS £6
Econet Network Interface Card — Acorn £49
EPL Toner Cartridge for LBP-4 £59
EPS Toner Cartridge for LBP-8 £75
Ergo-keyboard — Castle £90
Ergo-keyboard for A3000 — Castle £115
Ethernet Network Interface Card — Acorn £98
Fan filters (pack of 10) (not A5000) — ICS £6
Floating Point Accelerator (A5000 + A540) — Acorn £93
Floppy Discs, 10 × 3½" High Density £10
Four-Colour Refill Kit £30
HiPoint Mouse for A4 — Genius £49
I²C Adaptor — Baildon £10
I²C SWI (enhanced IIC_Control) — Baildon £15
– bought with AnDi Oddule £5
ideA Removable Hard Disc Fitting Kit for A5000 — ICS £25
I/O Expansion Card — Acorn £85
Keyboard Extension Cable, 2 m straight — Castle £8
Microlin fx Pocket Fax Modem — Pace £179
Micro Mouse — Clares £25
Midi Expansion Card — Acorn £80
Monitor Stand for A3000 — ICS £25
Mono/SCSI — Atomwide £48
Multiscan Monitor AKF50, limited offer — Acorn £285
Optique Monitor Screen Filter £49
Pc Card (includes Novell DR DOS), special offer — Acorn £99
Power Pad (Dual) — GamesWare £33
Power Pad (Single) — GamesWare £25
Power Switch — GamesWare £17
Printer Paper A4 Colour, 500 sheets £40
Printer Port Sampler — Vertical Twist £39
Printer/SCSI — Atomwide £74
Publishing Pack — CC £475
Revolution CD-ROM — Morley £295
Revolution Pro (for SCSI system) — Morley £435
RISC OS 3 Carrier Board for A310‡ — IFEL £21
RISC OS 3 Software Upgrade Kit — Acorn £77
Seal 'n Type spill-proof Keyboard Covers
– Archimedes / A5000 — Kador £14
– A3000 — Kador £14
Silent-keyboard — Castle £94
SVGA Multiscan ES Monitor 14" — Acorn £320
SVGA Multiscan PS Monitor 17" — Acorn £990
TouchWindow — Resource £277
Ultimate CD ROM Dual Speed (needs PSU upgrade) — HCCS £263
Whisper Fan Quietener (for A300/A400 series only) — ICS £15
Wizzo IDE Filing System on rom — ICS
– Wizzo4 for A4 – now available £39
– Wizzo5 for A5000 £39
Wizzo SyQuest Complete Package £295
– Extra 105 Mb Disc £60

ICS WIZZO (it's magic)

051-625 1006

The ideA range

ICS was the first company to offer IDE products for Acorns back in 1990; now they are the standard choice for new Acorn computers. Building on three years' experience we have continually improved our IDE filing system. It now offers the highest level of RISC OS compliance, and compatibility with at least 62 different hard discs tested by us. Can any other supplier make this claim?

Our IDEFS abolishes the RISC OS limit of 512 Mb, and offers extra features such as password protection, background operation, disc partitioning, and power saving (which allows some discs to stop spinning when idle).

Partitions can have different levels of protection. Family or pupils can access some of your files while you keep others safely out of their reach. Or you can simply protect the whole disc (reformatting is not required for this).

Our hard disc upgrade kits are based around two internal interfaces at present: A3IN for the A3000 Series, and ARCIN for the A300/A400/A500 Series. All kits are designed to a high standard and include all the parts you will need.

A3IN upgrade kits include an I^2C expansion socket as standard. They come with a 2½" disc already attached, and are easy to fit once you have opened up your computer. You may safely take no notice of rumours still being spread that internal upgrades might not be safe in an A3000. We have adhered carefully to the guidelines in Acorn's technical specifications, and in three years have never come across a problem.

ARCIN upgrade kits provide a fast 16-bit link all the way from the computer to the hard disc. They can even be fitted to an A310 without a backplane – quite a cost saving. A second hard disc can easily be added later if required.

Interfaces and hard discs can also be bought separately. By shopping around you may even save a few pounds. But beware: not all IDE hard discs work with all interfaces, and if you have a problem it may be difficult to decide who should put it right. We recommend buying a complete kit from one source.

WIZZO is the name given to our IDE filing system when it is supplied as a single rom chip. Wizzo5 is for the A5000, and Wizzo4 is for the A4. You should buy a Wizzo if you need password protection or wish to use larger hard discs.

A Wizzo rom by itself will only produce a slight speed improvement. If you need speed in an A5000, fit an ARCIN interface instead. Up to 60% improvement can then be achieved, but this does depend which hard disc you use so do check with us first.

How to read our ideA product references

A number at the end is the nominal hard disc capacity in megabytes. We usually round this down, so the actual formatted capacity may be higher. All discs have auto-parking. Average access times vary but all are below 20 ms.

All prices shown exclude VAT and are subject to change without notice. The cost to us for hard discs can vary enormously from week to week – not always downwards! Your local dealer can obtain *ideA* products from us or from a distributor.

• PLEASE TELL US WHETHER YOU USE RISC OS 2 OR 3 •

NEW LOWER PRICES !

Archimedes A300/A400/A500 Series Internal Upgrades

Package includes formatted hard disc, ideA interface card, hard disc cradle and fittings, fan kit, replacement multi-purpose LED (power and drive status), manual with fitting instructions. Can be fitted to an A310 without a backplane. If a backplane is used it must be a 4-layer type. Easily fitted by most users.

ARCIN 200	£270	ARCIN 420	£450
ARCIN 240	£290	ARCIN 540	£550
ARCIN 330	£359	ARCIN 1000	£875

A3000 Series Fully Internal Upgrades

Package includes formatted hard disc mounted on ideA interface card, manual with fitting instructions. Fully internal, using internal expansion slot. Co-exists with floppy drive and memory upgrades. Fits the new 1992 computers. Easily fitted subject to Acorn warranty stipulations.

A3IN 60	£190	A3IN 120	£275
A3IN 80	£225	A3IN 130	£315
A3IN 240	£399		
A3000 FAN KIT (not usually required*)	POA		

**Only required if the computer has been fully upgraded, e.g. with maximum memory AND Econet AND an external podule.*

Separates for hard disc upgrades

We can only guarantee the performance of ideA interface cards with hard discs we have tested ourselves, so please check if in doubt. If you are buying a hard disc for an A5000 please say so. If you intend to fit the disc in addition to an existing one we need to know the make and model of the existing disc. Acorn's interface does not support all makes of disc, and some models will work as a second disc but not on their own.

Hard discs on their own are listed as, for example, HD200. An S at the end indicates a 2½" disc.

ARCIN (Archimedes Interface for Internal disc(s))	£60
A3IN (A3000 Interface for Internal disc)	£75
ARCHIMEDES INTERNAL CRADLE KIT	£15
ARCHIMEDES A300 / A400 SERIES FAN KIT	£15
4-SLOT 4-LAYER BACKPLANE	£52
POWER CABLE FOR SECOND HARD DISC	£5
A5000 SECOND HARD DISC FITTING KIT	£15

HD200	£220	HD420	£400
HD240	£240	HD540	£500
HD330	£309	HD1000	£825
HD60S	£130	HD120S	£215
HD80S	£165	HD130S	£255
HD240S	£339		

WIZZO IDE Filing System on rom

Package includes rom, manual and fitting instructions. Compatible with RISC OS 3.0 and 3.1. Allows up to four logical partitions over two physical drives. Each partition appears separately on the icon bar and can have different password protection. Makes use of existing Acorn hardware for maximum compatibility, but works with a wider range of hard discs. Security breaches using ADFS can be prevented. Can be fitted easily by a competent user.

WIZZO5 for A5000	£39
WIZZO4 for A4	£39

Quantity discounts available • Dealer enquiries welcome

Other hard disc sizes may be available. Please contact us for information.

Risc PC No-Show Disappointment

ONE of Acorn's Risc PC launch goals was to have several hundred machines at the *Acorn User* Spring Show in Harrogate for eager punters to take home with them.

Richard Percy, Acorn's consumer marketing manager, spoke of having lorry loads of Risc PCs at the show. In the event, though Risc PCs were abundantly distributed among exhibitors for demonstration purposes, none were on sale.

Hundreds of machines were built and ready to go out, but for one vital component: Arm610 processors.

The story goes that UK chip manufacturer GEC Plessey Semiconductors (GPS) hadn't been able to deliver a large production batch of chips.

On the first day of the show Peter Bondar, Acorn's product marketing manager, revealed that over 4000 orders had already been logged on Acorn's order processing system. 'An emergency consignment of 1000 Arm610s from VLSI in the US is due in any day so we can get production moving,' said Bondar. Just weeks before the launch, a Far Eastern PCB (printed circuit board) manufacturer responsible for fabricating Risc PC motherboards had to be replaced because of production engineering difficulties.

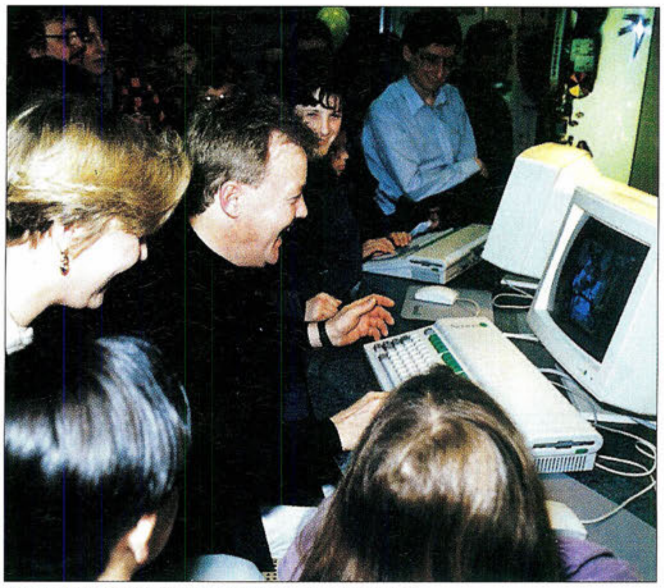
● Despite a much larger hall at the Harrogate Exhibition and Conference centre, this year's Spring *Acorn User* Show still managed to be packed out at various times during all three days of the exhibition, with Saturday, especially, being extremely busy.

Sixty-four exhibitors showed their wares compared with 50 the previous year and many companies were sharing stands, making the actual number of companies present even higher. Visitor attendance was up by 20 percent even though the Acorn Risc PC launch, which had been well concealed beforehand, only took place a week earlier.

Geoff Potter of Safesell, the show organisers, commented: 'It was a smashing show all round and I think everybody had a good time. There was very positive feedback from all the exhibitors and the show celebrity, Keith Chegwin went down brilliantly with the kids and he enjoyed himself too.'

Potter revealed that one exhibitor had 800 enquiries for educational software at the show and several exhibitors, *Acorn User* included, ran out of stock during the weekend.

● For the first time at the Spring Show, the audience was treated to free theatre presentations by several exhibitors, covering every aspect of the Acorn market. During the three days, over 3000 people took up the opportunity of watching a demonstration on the big 'computer screen' inside the theatre, and many, many more watched through the windows along the two sides.



Show celebrity Keith Chegwin enjoying himself

The first session of Acorn Computers' overview of the Risc PC played to such a packed house that the organisers arranged for a repeat of the presentation each day. The theatre continued to fill to capacity each time this one took place.

There were also games, quizzes and competitions throughout the day, including the climax and the ultimate play-off between the daily heat winners in the Crystal Maze Competition. And on Saturday the winners of the Schools Booklet competition received their prizes from Keith Chegwin, our special celebrity guest.

Keith was the undoubted star of the show, attracting huge crowds wherever he went – and creating mayhem in the theatre, even when he was simply presenting prizes.

When he came back for the Crystal Maze challenge, it was difficult to tell who was the most excited: the audience, the participants, or Keith himself.

FineArt from Pineapple

One of the many new 24-bit art packages which have been launched recently is *FineArt* from Pineapple software, better known for products like the *Killer* anti-virus utility which is now bundled with Acorn's new Risc PC.

Feature highlights of *FineArt* include stencilling operations, definable textures and a myriad of image processing and filtering options in 24-bit Risc PC colour.

As part of Pineapple's pre-launch preparations, independent users have been sought to evaluate the package and its manual.

FineArt is also compatible with machines using ordinary first generation display hardware in up to 8-bit (256 colour) screens as well as the wide range of add-on graphics hardware offering up to 15-bit (32,000 colour) photo-realistic screen modes.

Pineapple promises that later releases of the software will be available to registered users at cost price. For more information contact Pineapple on 081-599 1476 or Fax 081-598 2343.

SA Distributor Appointed

AT the time of writing, South Africa was coming to terms with its first free general election... and the appointment of an official Acorn distributor.

Johannesburg-based Oak Tree Technologies was officially signed up as South Africa's sole distributor at a ceremony during the *Acorn User* Spring Show.

Wayne Postma, managing director of Oak Tree Technologies, told *Acorn User* that there is a great hunger for educational IT in South Africa and so far no single computer platform claims dominance – an ideal scenario for Acorn.

'Our research has shown us that the opportunities for Acorn in the education market are set to rocket in the next 12 months' said Bob Coates, Acorn's international general manager.

Acorn computers are actually well-known in South Africa, according to Postma, mostly through indirect imports.

'We will be providing a one-stop-shop for the growing Acorn community,' said Postma, adding that education and special needs will be the primary focus of attention.

Next Generation of Graphics Card

IF you're an A300, A400, A540 or A5000 user and a nice new Risc PC isn't a viable proposition, the alternative is to squeeze as much out of your existing machine as possible.

State Machine's latest add-on for doing just that is ColourView, the latest in a line of graphics accelerator cards from the Luton-based firm.

ColourView is an all-new replacement for the original G8 and G16 State Machine graphics cards and like the Risc PC includes some features like VESA DPMS monitor power saving, custom monitor mode definition files, a resolution/colour depth mode picker, 16-bit screen modes and a 24-bit palette.

24-bit screen modes are possible, but not yet with operating system support for the desktop.

Onboard flash memory is used to ensure convenient upgrades to the support firmware. A version of *Replay* is bundled with the card to enable 16-bit colour movies to be shown. An SVGA add-on is also available to boost the effectiveness of an Aleph One PC card.

Users can expect a doubling of graphics re-draw performance in PC modes and text speeds are accelerated by up to eight times. 800x600 PC modes in up to 256 colours are now available as well as 1024x768 in 16 colours, with drivers supplied for the popular Cirrus Logic SVGA chip used.

For A5000 users with a State Machine ClusterCard and 1Mb VRam fitted, a special cheaper version of the card, called ColourView 135, is available minus its redundant frame store.

ColourView is priced £149.99 + VAT, ColourView 135 for ClusterCard VRam users is £129.99 + VAT and the ColourView SVGA add-on is also £129.99 + VAT. For more information contact State Machine on (0582) 483377 or Fax (0582) 480833.

The Pressure Is On

EESOX, the CD-Rom software specialists and Vaughan Allanson, a long-time user of Acorn computers for his professional graphic design work, have combined to develop and market pressure-sensitive graphics tablets for Acorn computers.

Two Wacom-sourced tablets are available in A5 and A4 sizes for £399 + VAT and £549 + VAT respectively. The pads operate via the serial port and use a cordless stylus. Accuracy is to within ±0.15mm with a resolution of 0.02mm. An *ArtWorks* pressure tool software driver is priced £29 + VAT. This enables lines and strokes to be drawn in a *fluid* effect, rather like using a real paint brush.

Support for the burgeoning selection of other image-editing applications appearing on the market is being considered by other vendors. For more information contact Vaughan Allanson on (0638) 578597.



Artwork produced using the new pressure-sensitive graphics tablet

New CAD Packages

IF 24-bit graphics packages weren't stealing the Risc OS software limelight at present, CAD would probably take centre stage instead.

Along with Minerva's latest release of *ProCAD* (with Ordnance Survey mapping data facilities) comes the grandly-titled *Apollonius PDT* CAD package from Oak Solutions.

Apparently, *Apollonius* was a major historical figure in the world of geometry who invented terms like ellipse, hyperbola and parabola in 250BC. *Apollonius PDT* replaces the current Oak CAD package, more simply known as the *Parametric Design Tool*.

Oak says *Apollonius PDT* has a revolutionary tool bar which features just 8 fundamental *intelligent* context-sensitive tool icons. This, argues Oak, is a much needed departure to the CAD tradition of cluttered and confusing screens.

Parametric design means that drawing elements are physically related to each other so that if one element is altered, it can affect others. Oak Solutions' Tony Cheal explains: 'This allows actual mechanical objects to be simulated – for example draw a four-stroke engine, change the crank angle and the engine will work.'

Apollonius PDT is priced £150 + VAT and upgrades from the earlier package cost £75 + VAT. Oak Solutions is on (0532) 326992.

Photodesk launch

Spacetech has formally launched *Photodesk*, its full 24-bit colour image processing application. At £169.95, Photodesk is practically £70 dearer than the comparable *DA's Picture* (see separate story), but there are no plans to modify the price.

Photodesk is Risc PC compatible, has built in virtual memory support for very large images and understands most commonly used image file formats. Spacetech is on (0305) 822753.

ProCAD upgrade

ProCAD 1.03 has been released by Minerva, with a long list of enhancements, many of which have been suggested by users. One result is that the manual now has a 50 page supplement.

Minerva has also revealed that it has now become an Ordnance Survey Licensed Developer and *ProCAD* can now import digital OS mapping data directly.

For more information contact Minerva on (0392) 437756 or Fax (0392) 421762.

Avatar winner

8-year-old Lynne Snape of Stokesley, North Yorks, has won the *Acorn User* Spring Show competition, which was grandly titled 'Avatar: The Journey Home.'

Lynne was picked from over 1000 entires and wins an Acorn Pocket Book plus a hamper of computer software donated by show exhibitors. Six runners up will also receive 4th Dimension games.

ColourFun

Smart DTP has released *ColourFun*, a new *Draw* picture format resource pack with art work supplied in both outline and coloured forms for children to experiment with.

ColourFun is priced £14.95 inclusive and, along with five other Smart DTP resource packs, is now available from Sonamara distribution on (0635) 299676.

WimpGEN Release

SILICON Vision has turned its attention to Risc OS desktop user interface development with the release of *WimpGEN*, an interactive user interface generator.

WimpGEN is designed to simplify designing and implementing programs which are compliant with the Risc OS desktop.

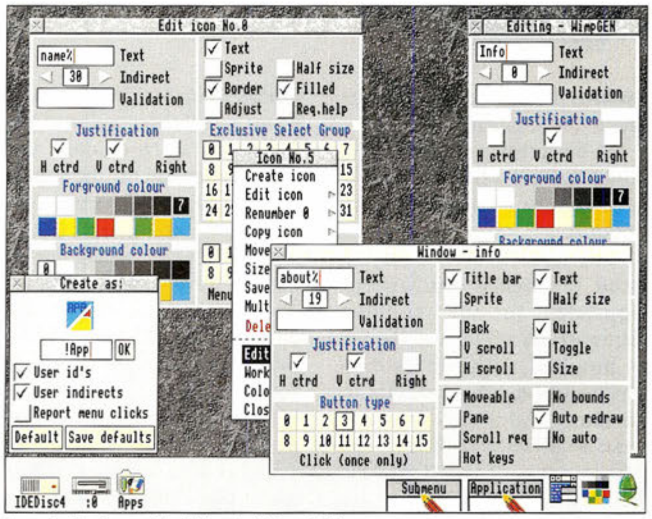
The idea is that *WimpGEN* enables you to visually construct window objects like dialogue boxes, buttons, menus, etc. using a graphical editing toolkit, and then *WimpGEN* generates the code you need to link the objects to the rest of your core program.

Traditionally, it's a complex task to develop Risc OS application user interfaces for even the simplest of programs.

This complexity of linking together various bits of code and Risc OS resources often generates bugs, which then lead to delays while they're ironed out. This undoubtedly puts many people off programming for Risc OS and is one reason why it takes a relatively long time for Risc OS applications to be produced.

Helix Basic was one attempt at an easy to use Risc OS desktop application development tool, but this never really earned wide acceptance. If *WimpGEN* is all it's cracked up to be, Silicon Vision might have produced what a lot of programmers have been waiting for.

WimpGEN is priced £99.95 including VAT. Silicon Vision can be contacted on 081-422 3556 or Fax 081-248 3589.



Easy designing with Silicon's WimpGEN

DA Names Price

DA'S PICTURE, the professional image/photo-retouching package ported from the Atari ST by Digital Arts in Germany, is to start shipping by June with the unexpectedly low price of £99 + VAT.

Ray Cross, of the official UK distributors CGS ComputerBild, originally told *Acorn User* the package would be priced 'below £199'.

DA's Picture is just one of a suite of professional publishing tools available for the Atari ST. Cross suggests that the UK Acorn market is different.

Commenting on the low price, Cross told *Acorn User*: '*DA's Picture* is a package for everyone and will compete with all the other image editing packages which are now appearing on the Risc OS platform.'

Cross, whose background is firmly from the Atari world, said he was impressed by the level of Acorn user interest in *DA's Picture*. He even had a word of praise for some of his competitors.

'There are some packages out there which look very good, like *Photodesk*, for example.'

He quickly added that DA's experience in the publishing world would be a key advantage in the Acorn market.

The grapevine has suggested that Acorn felt *DA's Picture* had been underpriced. Acorn's specialist in publishing systems, Wyn Thomas, told *Acorn User* he felt that at £99 *DA's Picture* was extremely good value.

He also added that an enhanced professional *DA's Picture* package, including some advanced print screening software, might become available later at a higher price.

CGS ComputerBild can be contacted on 081-679 7307.

Nexus News

SJ RESEARCH had three new Nexus schools network product developments to shout about at the *Acorn User* Spring Show.

Firstly, SJ has developed a Risc PC Nexus network interface card (NIC) which uses the Risc PC's dedicated network card slot.

Secondly, a new low-power consumption Nexus NIC was launched for the Acorn A4 portable and finally there is a new Nexus file server with an Econet connectivity option.

The card plugs into the A4's own dedicated networking expansion slot, leaving the parallel port free for other peripherals.

Standard interfaces on the new compact stand-alone Nexus file server included an Econet port and a pair of printer ports.

Also announced at the show was a new printer sharing system for Nexus Junior.

For more information and pricing, contact SJ Research on (0223) 416715 or Fax (0223) 416440.

16-bit sound on Risc

ESP has produced a compact 16-bit sound card for the Risc PC provisionally priced at £69.95 + VAT. The card plugs into a small VIDC20 header on the Risc PC motherboard and will enable full 16-bit CD-quality 44.1KHz sound playback.

Software sound synthesis is under development, as is PC SoundBlaster and Microsoft Business Audio compatibility for both Risc OS and PC applications. Early Risc PC motherboards may require a dealer to fit the card. ESP is on Fax/phone (0602) 295019.

Personalised items

One popular stand at the *Acorn User* Spring Show was Tekoa Graphics, a late entrant doing brisk business printing logos and other designs in *ArtWorks* or *Draw* file format onto mugs using a wax thermal printed dye sublimation process.

When they're not printing mugs and tee-shirts, Tekoa graphics acts as the UK agent for Aussie Acorn software house Experimental Endeavours, who produces the *ART20* art package. Tekoa is on (0788) 571434 or Fax (0788) 546376.

Faster 486 cards

Aleph One has confirmed that it will produce its own faster versions of the Risc PC 486 co-processor card which it has designed for Acorn. Aleph One's Alex van Someren told *Acorn User* that a 100MHz 486DX4 version is on the cards, but a Pentium is unlikely.

Sibelius triumph

A Sunday Times article recently declared that the *Sibelius 7* music publishing package which runs exclusively on Acorn computers could become an international standard.

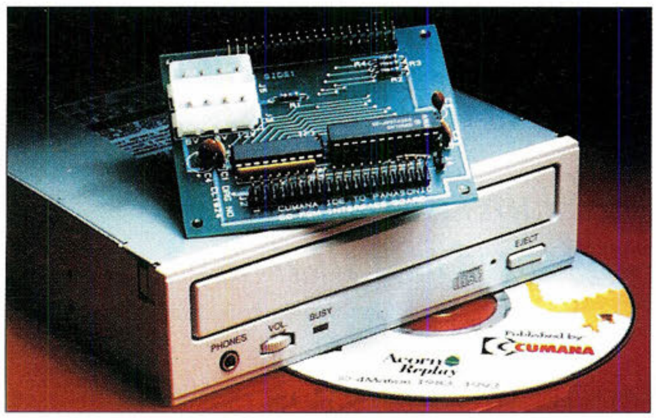
The article also indicated that *Sibelius 7* was superior to anything on the Mac or PC. Around 50 Sibelius Software customers have bought Acorn computers simply to run *Sibelius 7*. Sibelius Software is on (0223) 302765 or Fax (0223) 351947.

The Row which Never Happened

A MAJOR row between Acorn and Apple was headline news in the computer industry paper, *Microscope*, recently. Exciting though the story might have been if it was true, the alleged row actually never happened, according to Acorn's marketing director, Mike O'Riordan. O'Riordan was being interviewed by Microscope about the Risc PC launch when the discussion turned to the dual-processor option. O'Riordan suggested hypothetically that Acorn could make a PowerPC co-processor and run Apple's PowerMac System 7 OS at the same time as Risc OS 3.5.

O'Riordan's off-the-cuff suggestion that Apple might not like Acorn to licence their operating system was wrongly interpreted by Microscope as evidence of Apple having refused Acorn such a licence application.

Risc PC CD-Rom



The new CD-Rom drive from Cumana for the Risc PC

IF you'd like £50 off a Cumana SLCD CD-Rom drive, buy a Risc PC. The Risc PC-specific version of Cumana's Panasonic CR562-based CD-Rom drive, called the 300i, is priced £249.95 + VAT, compared to the usual model's £299 price tag.

Incidentally, the old £339 + VAT consumer price has been dropped for this product and all customers, education included, will be quoted £299 + VAT.

The original SLCD is an externally-cased unit with its own power supply, while the Risc PC version is a bare internal drive. However, the main difference is that the 300i plugs into the IDE hard drive port via a tiny interface card as if it were a second hard drive. Precious DEBI podule expansion slots are left free for other uses.

One snag is that only two physical drives can be fitted to the Risc PC's sole IDE controller, so you'll have to make a choice between a second hard drive or a CD-Rom. Like all Cumana's current Acorn offerings, the 300i is a double-speed, Photo CD-compatible unit.

Cumana says it expects to launch its new 32-bit DEBI-compatible SCSI II controller card for the new Acorn Risc PC in June.

The card is buffered and supports ANSI X3T9.2 SCSI II standards and will theoretically hit 10Mb/second (synchronous) or 6Mb/second (asynchronous) data throughputs.

Desktop-based SCSI manager software is supplied with the card and the firmware is resident in Flash EPRom so it can be upgraded without the need to physically remove the card from the computer.

The card is also compatible with older Archimedes models. Pricing is expected to be sub-£200. For more information, contact Cumana on (0483) 503121 or Fax (0483) 451371.

Easy Font II

KEEPING track of dozens, even hundreds, of Risc OS fonts is a tricky task at the best of times.

Fabis Computing has been working on the problem for a while now and debuted its *Easy Font II* utility at the recent *Acorn User* Spring Show.

The *Easy Font II* demo at the show was very impressive. *Easy Font II* enables font families to be quickly accessed from a pop-up scrolling window.

Clicking on the fonts required makes them immediately available to all applications. Fonts can be removed just as easily as well. Fabis says that most applications immediately register the font selections and update their font management variables.

Font Master II can also export text using different fonts in a variety of object formats, including *Draw*.

There is also a font style previewer and a font finder for files which have embedded fonts.

Easy Font II costs just £25 + VAT and comes with ten font families of ten styles – 200 different selections in all. Fabis computing is on (0283) 552761.

Français

A CD-ROM for language training with over 50 interactive French activities recorded in high quality sound has been produced by Oak Solutions.

Designed for pupils at Key Stages 3 and 4, *CD Français* was produced with the established Tricolore course in mind, but Oak says the package is useful as support for many other French language courses.

Trials in 12 Leeds schools have indicated that the CD-Rom is more effective than the equivalent audio tape-based Tricolore courseware.

Oak Solutions is on (0532) 326992.

Interactive swimming

Version 2 of the interactive multimedia training package, *Swimming*, from CD Sports Ltd, has been released. *Swimming* was developed using *Genesis II* and is aimed at teaching basic swimming and life-saving techniques.

The original version won a seal of approval from the Royal Life Saving Society. The new version is technically superior to the original and a CD-Rom version is due soon. CD Sports is on 051-691 0893.

Free EasyFiler offer

Soft Teach Educational is offering the *EasyFiler* classroom utility, worth £15, free to anyone who takes up their offer to view up to three of their education software catalogue items on 28 day approval and subsequently buys at least one.

The offer is subject to approval. For more information contact Soft Teach Educational on (0985) 840329 (phone or fax).

Helios on the Arm

Perihelion Distributed Software has ported its micro-kernel operating system for embedded and multi-processor applications, called *Helios*, to the Arm processor family.

Helios has previously been ported to chips like the Inmos Transputer. Perihelion worked on the project in collaboration with VLSI Technology, the first chip company to make Arms. Perihelion is on (0749) 344345.

Budget spreadsheet

At £25.95 inclusive, it has to be one of the cheapest spreadsheet applications for Risc OS and it's just called *Calc*.

Produced by Edinburgh-based Circular Triangles, *Calc* is said to be very easy to use.

If that's not enough, Calc is on special offer until September 1st for just £15. Site licences are available.

Circular Triangles' address is 13 Woodhall Terrace, Juniper Green, Edinburgh, EH14 5BR.

Risc PC Generates Pixel Mania

PROART 24 from Clares – (0606) 48511) – and SpaceTech's – (0305) 822753) – *PhotoDesk* were the two bitmap graphics applications being demonstrated at the launch of Risc PC in London's Cumberland Hotel.

They mark a serious departure from previous Risc OS painting applications in that they allow you to produce and manipulate truly photo-realistic imagery in conjunction with the new Acorn hardware.

In the Super VGA 16.7 million colour modes supported by Risc PCs with the 2Mb VideoRam option, 24-bit files can not only be displayed but subtly retouched or seamlessly pasted together in their full, true colour glory.

ProArt 24 is not just a 24-bit version of *ProArtisan*, as it boasts a vastly expanded range of painting tools over its predecessor.

Though we have not been able to spend long enough alone with the software to create any imagery of our own, the imagery produced for publicity purposes is a strong indication of a powerful and versatile application, with the added advantage of its familiar and easy-to-use interface.

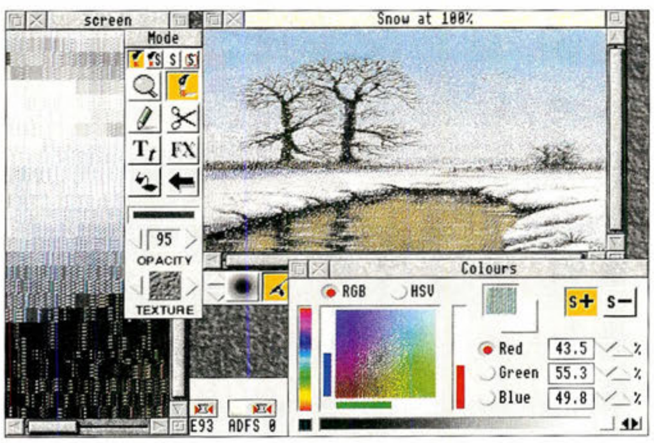
PhotoDesk on first impression is a highly-advanced image generator with the unusual capability of applying any of the program's effects with any of the tools – enabling spray-on embossing or gamma-correction along a path, for instance.

Additionally *PhotoDesk* has around 80%, the most usable and useful of *PhotoShop's* image processing facilities, making this a most usual and useful package. This package, which includes support for pressure-sensitive graphics tablets, seems to be aimed at the serious user, being rather more complex than *ProArt24*.

Two Fine for Words

TWO NEW painting applications, one PD and the other a commercial product, are soon to be released, confusingly under the same name, *FineArt*.

On experimentation with a pre-release version of Pineapple's (081-899 1476) *FineArt* (the commercial package) I discovered some features quite unlike any I have ever experienced on Acorn software, such as the smudge tool which gave beautiful pastel-on-paper effects using the program's colour rendering routines.



Pineapple's *FineArt* in action, showing continuous colour dithering of 24-bit data in a 256 colour mode.

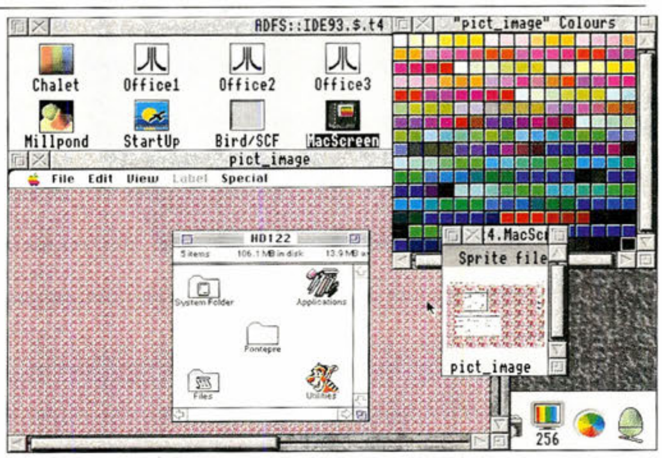
The advanced continuous dithering technique, similar to aero-diffusion (as used by Computer Concepts' applications to display 16 and 24-bit images) is used to brilliantly emulate 16 million colour palettes and represent true-colour graphics in 256 colour modes.

The application works with Risc OS 3 and should be fully compatible with the Risc PC as well. For more on Barry Alcock's *FineArt*, the Acorn platform's very first true colour bitmap editor, turn to the graphics application roundup on page 44 in our PD Special.

Import

IMAGE importing for the Acorn now includes such files as *PCX, BMP, TARGA, MacPaint, ColoRIX* and other exotics. This is not a *Translator*-type application, as, it remains totally invisible, allowing direct import of previously unloadable bitmap formats into Risc OS applications, even *Paint*.

This is an important step towards intercompatibility with other platforms. Alternative Publishing Limited is on 041-248 2322.



Effortless importing of foreign bitmap formats directly into *Paint* and other Risc OS applications.

More vectors wanted

It is becoming increasingly apparent that software developers in the Acorn world must grasp the bull by the horns and create a wider market base for the vector graphics user.

Now that Acorn Risc PC users will be offered inexpensive PC 'co-computing', the relatively poorly-equipped Risc OS vector packages will soon be compared to the likes of *CorelDraw 4* with its myriad tools and effects.

The power of programs like *ArtWorks* and of the Acorn platform generally lies in speed but not in features.

It would be an important commercial and platform-promotion opportunity missed if the great potential of Acorns especially Risc PC, is not fulfilled.

Rephormed character

A new version of Oak Solution's *Rephorm* morphing package has been released for Risc PC.

Its additions take full advantage of the new hardware, and the package has been seen in some of Acorn's promotional footage to generate stunning broadcast quality animations. Oak Solutions can be contacted on (0532) 326922.

Pic of the month

The Pic of the Month prize will restart in June. The grand prize has been upped to £20.

Stay Kool

KoolCAD by Kuldip Pardesi, best known for his excellent screen saver program, is a powerful 3D editor with shaded previewing and output support for PD and commercial raytracers.

KoolCAD is the first serious 3D graphics application to hit the scene in ages. See the PD special, Graphics roundup on page 44 for more.

You can contact the Graphics Page by writing to Jack Kreindler, at The Graphics Page, *Acorn User*, Europress Enterprise, Europa House, Adlington Park, Macclesfield SK10 4NP.



Playing the Game

NOW that BT's Weekend Rate can give us cheaper or longer calls to our favourite Bulletin Boards, we can take more time to explore what activities are on offer to users while actually online.

Many BBS Sysops spend time creating a professional appearance for their systems, building special areas and features that can be missed by just logging on to grab files only.

One of these areas will probably be *Online Games*, and Richard Paddle, Sysop of Rich in Paradise BBS, has written and released a *Compendium of Games* for ARCbbs systems.

Each game is based on a simple idea, such as *Hangman*, *Trivia* questions, *Snake* and *Jumbled* words.

The programs are designed to be run using the *Door* system that allows external programs to communicate and interact with BBS users.

Richard's Compendium consists of five games. *Boxed In* is a game where you can move a marker in four directions while the computer tries to block your path. A high-score table shows who made the most moves before being *Boxed In*.

Snake lets you control the direction of a snake whose tail grows as it eats the numbers that appear, but you must keep the snake inside the frame and not turn back on itself.

BBS callers can gamble their online time or download allocation with these next three. *Hangman* is the classic game where you try to choose letters in a blanked word in time to forestall the Hangman.

Jumble is a simple anagram game against the clock. *Trivia* gives multiple choice questions on a variety of subjects.

The Compendium of Games is Shareware, and costs for £10.

You can contact Richard on Arcade BBS, or on Rich in Paradise BBS (2:257/120.0@ FidoNet 0442 255199) or by e-mail at richard@arcade.demon.co.uk.



Unjumble the words in *Jumble*

Getting the Hang of Internet

ONCE you have an Internet connection with FTP (File Transfer Protocol) ability, you can download files completely free from a large number of 'ftp' sites around the world.

The process is quite simple. Let's take an example where you would like to download the latest Acorn *Printers* application and you are using the PD program *KA9Q*, as *TCPIP*, connected to Demon Internet.

With the main *TCPIP* Command Window open on a live Demon connection, press Return on a blank line to get the net> prompt, and type:

```
net> ftp ftp.acorn.co.uk
```

A blue window will open and you'll see:

```
SYN sent
220 Acorn FTP server ready.
Established
Enter user name:
```

You type 'anonymous'. You'll be asked for a password, which is expected to be your full Internet address.

```
331 Guest login ok, send
your complete email
address as password.
```

You enter your address at the password prompt.

```
Password:
david@arcade.demon.co.uk
```

After the welcome message, type the command to select the correct directory, which can be a MSDOS-like command, 'dir' to view a directory listing, and 'cd dirname' to select.

```
cd pub/riscos/releases
```

The file you want is called 'printers,ddc'.

The next step is very important – type B then Return. This will ensure that the file transfer sends Binary 8-bit data. To start the download just type:

```
get printers,ddc printers
```

Unix filenames are case-sensitive and may be longer than 10 characters, so you may need to add a shorter filename alias for your filing system.

Don't be fooled by the report 'Transfer Complete' – this just means your 'get' command line has been received. Wait for the report:

```
Get complete, 404130 bytes
received
```

before typing:

```
quit
```

which will break the connection to Acorn's ftp server.

The file will have been saved as 'printers' in the directory containing the *TCPIP* application.

Ace of clubs

Streatham in London is the home of Ace BBS, run by Adil Khan.

Ace has access to many Acorn FidoNet Echomail areas and offers Point status to users who want to use Ace purely for Echomail exchange. They will miss out on features found on the BBS online, such as information about Silicon Software, the shareware programming club which aims to gather good programmers and distribute their work as paid-for shareware.

Ace BBS is on 081-677 8992 from 7:30pm to 7:30am at all speeds to 14,400 Baud.

Supporting S-Base

The Digital Databank BBS in Welwyn Garden City has opened a support area for *S-Base* – Longman Logotron's Database Management System.

The area is well supported including information, message and file areas, lists of useful contacts, and backup support by Longman Logotron with a BBS user-group discount on *S-Base*.

The DDB has two 24 hour lines on (0707) 329306 (speeds to 16,800 HST) and (0707) 323531 (speeds to 14,400).

Remember Solidisk?

Nigel Woolcock in Hayle, Cornwall, runs Chaos Cottage, the support BBS for the SoliNet user group.

SoliNet has rights to copy, modify and distribute SoliDisk software and to continue technical support to the company's past customers.

The BBS is a *Wildcat* system running on a 386DX40 PC with 340Mb IDE hard drive, CD-Rom and a Zoom 14.4X modem.

Call Chaos Cottage BBS between 10pm and 7am on 0736 756274 (speeds to 14.400 excl.V23).

You can contact the Comms page by writing to: David Dade, Acorn User, Europress Enterprise Ltd, Europa House, Adlington Park, Macclesfield, SK10 4NP or by e-mail to: DaviD@arcade.demon.co.uk, or by modem on Arcade BBS, User #2 - 081-654 2212 or 081-655 4412.


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AZTEC
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MEDIEVAL
FUTURISTIC
GO FOR A GAME
PHYSICAL
SKILL
MENTAL
MYSTERY
FACE THE FINAL CHALLENGE
Gold not silver
'The Crystal Maze is fantastic. The graphics and sound are stunning, the puzzles and games very playable and challenging.....'
Risc User, December 1993
'The Crystal Maze is a must for everyone from lovers of mind bending puzzles to joystick-frenzy enthusiasts'
Acorn Computing October 1993
THE CRYSTAL MAZE
The Crystal Maze is available exclusively for Acorn 32 bit computers
The Crystal Maze is a Chatsworth Television production for Channel 4 based on ideas by Jacques Antoine © 1990
£39.95 (inc VAT) from
Sherston Software
Swan Barton, Sherston,
Malmesbury,
Wiltshire SN16 OLH
Tel 0666 840433
Fax 0666 840048
SHERSTON
Please send me ___ copy of The Crystal Maze® at £39.95 inc VAT
Name
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Post Code
Visa/Access:
Exp. Date:
Signed

Acorn Publishing Impact

ALONGSIDE the release of the new range of machines, Acorn has launched an updated version of the professional pre-press publishing system first seen back in 1992.

The new system is based around the Risc PC 600 and is described as a *turnkey* system, in that it arrives ready to use with all the software set up.

The system is aimed, primarily, at small to medium sized companies in the printing and publishing sector. The machines will be fitted with 9Mb Ram and a 420Mb SCSI hard disc, with a variety of peripherals available, including 14 and 21in monitors, high resolution laser printers and scanners.

The price range is expected to lie between £5,000 and £11,000 for complete systems, offering a noticeable saving on comparable PowerPC-based solutions. The software places emphasis on cross-platform compatibility accepting a wide variety of graphics formats, such as TIFF and PhotoCD, from both DOS and Mac discs.



The new Acorn Publishing System

Support for 4-bit colour is comprehensive and the systems will be shipped with the latest version of *Impression Publisher* and Risc OS 3.5, as well as a set of primary fonts.

The printers supplied with the systems offer 1200dpi A3 output and print directly to plazar and other 'instant plate' materials, as well as offering the option of connection to professional plate-making machines via the enhanced PostScript drivers.

An improved version of the *T1ToFont* application is also supplied to allow the use of industry standard Type 1 compatible fonts. The systems are available from Acorn Publishing dealers, though in the print sector the systems are sold exclusively through AB Dick under the Graphtex 300C and 400C brand names.

Updates for existing systems will be available and will consist solely of the new Risc PC 600 and associated software. For further information AB Dick is on 081-568 9297.

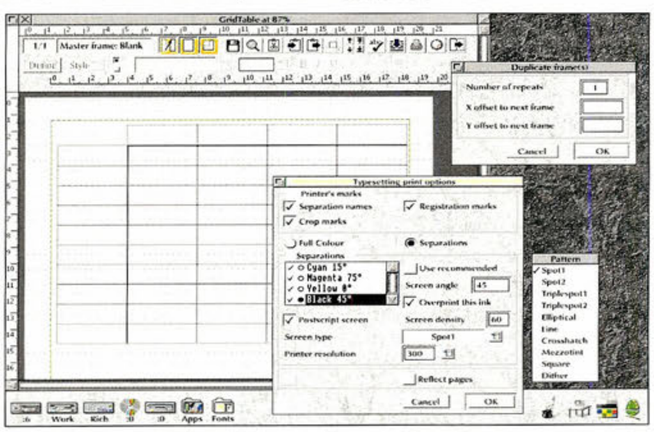
First Impressions

COMPUTER Concepts was demonstrating pre-release *Impression Publisher* at the *Acorn User* Spring Show. It promises a dazzling array of new features, and should be shipping by the middle of May, assuming no further bugs develop.

A sizeable backlog of upgrades will take several weeks to clear. So customers who have already ordered an upgrade will receive their copies in strict order, and those who ordered copies at the show can expect to wait about 4 weeks.

The new *Graphics Loaders* were also on sale at the CC stand. Not on sale, but promised soon, was *MacFS* the new Mac disc reading software which will read and write to both floppy and hard discs, including syquest devices and optical media.

It is an ideal solution for those who use both machines and for DTP users who need to send files to be typeset. *MacFS* costs £99 + VAT.



Magazine Set up

A NEW TRADE magazine for the mobile communications industry has selected an Acorn-based Publishing System for its pre-press production.

The magazine *Land Mobile* is produced on a pair of Acorn machines which import copy from a variety of sources and formats supplied by freelance journalists.

The page layouts are created using *Impression* and the files are passed to Hampstead based TJ Reproductions who create the finished product.

The magazine's Editor Richard Lambley, decided to use an Acorn-based solution after researching the options and finding that the systems were reasonably priced without sacrificing quality.

TJ Reproductions his one of the few companies which offers a full bureau and printing service for Acorn machines and can be contacted on 071-372 4430.

Problem printers

For those of you who've already found out that the new Acorn printer drivers pointedly refuse to work with Computer Concepts range of Turbo Drivers, an update of the CC software is expected in the not too distant future.

Serious bus syndrome

After far too long without a credible piece of photo-retouching software available for the Arm platform, a plethora of packages were on show at the *Acorn User* Spring Show.

Typical, you wait ages and then four come at once. Digital Arts, SpaceTech, Clares and Oregon were all showing packages which address the current lack of support in this area.

This has been a limiting factor to the DTP abilities of the Arc for some time and will hopefully put this criticism to rest. Jack Kreindler will be furnishing us with a round up of the available packages in the next issue.

First view of First Page

First Page is an entry level budget DTP package from Longman Logotron. It offers an adequate set of simple tools and is designed to complement the companies word processing package *Pendown*. It will sell for £49.

Welcome to DTP

DTP has long been the most important market sector for Acorn outside education, and this new monthly DTP Column aims to bring you the latest news and views on the professional printing scene.

Although the emphasis will be on how to use your Acorn for professional typesetting, the vast majority of what I will be covering will be useful for all users of Acorn DTP systems, and if you have any specific requirements or want to see certain subjects covered, do drop me a line.

You can contact the DTP page by writing to: Steve Powell, Acorn User, Europress Enterprise Ltd, Europa House, Adlington Park, Macclesfield, SK10 4NP

PHOTO touch

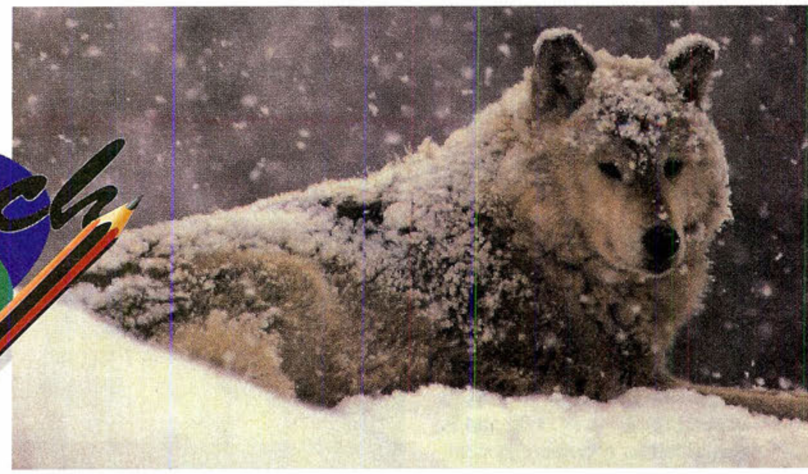
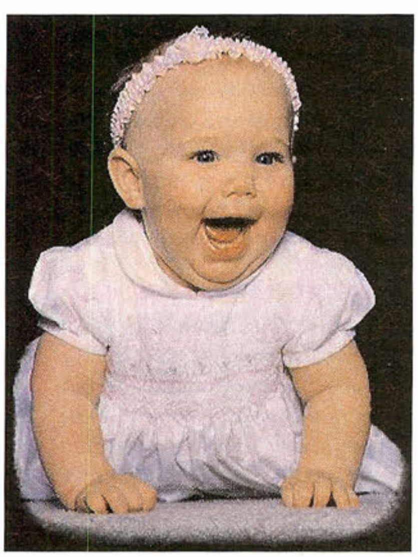


Photo Retouching, Image Processing and Colour Painting

Oregan PhotoTouch is a painting, professional prepress, and processing system all in one powerful package. Working with photographic quality images up to 24bpp (16.7 million colours), take any photo and turn it into your own creation. Add special effects, and realistically retouch the image until it suits the task for which it is required.

PhotoTouch is an essential tool for owners of all graphics enhancer boards, including the **ColourCard Gold**, which will allow you to be creative in a 16bpp desktop.

For those not owning such hardware, PhotoTouch uses sophisticated rendering techniques to produce a 256 colour image for editing, whilst the 24bpp image is continuously updated in memory, ready for saving when you've finished.



The powerful tools of PhotoTouch include:

- Transparent, translucent, and opaque painting tools
- Colour filters, correction, addition and subtraction
- 24bpp, freehand cut and paste
- Sophisticated protection masking
- Airbrushing, blurring and smudging
- Many varied linear, and radial gradient fills
- Morphing, swirls, distortions, and bubbling
- Scratch, ripple and embossing
- Virtual memory management option
- Allows editing of Replay files
- Exports as TIFF, JPEG, Clear, and Sprites
- Imports over 40 foreign file formats

• Requires RISC OS 3.10 or greater •



This represents just a small fraction of the staggeringly powerful facilities offered by PhotoTouch. What's more, Oregan intend to develop this package further still, and upgrades will be sent to existing users, absolutely free of charge.

PhotoTouch supports VIDC20 display modes, ensuring complete compatibility with the new RISC PC.

Oregan is offering this package at an incredibly low launch price of just **£79.95**. However this fully inclusive price will only be held for a short period.

Oregan Software Developments
36 Grosvenor Avenue : Streetly : Sutton Coldfield : B74 3PE
Tel : 021 353 6044

Oregan
DEVELOPMENTS



Pick A Picture with PicAPic

PICKAPIC is typical of those PD utilities which you wonder how you did without before they were added to your software collection. Recently updated by Hugh Eagle to version 1.12, *PickAPic* is now one of the most popular programs on the PD scene.

The program is designed to simplify the process of searching through collections of graphics files and allowing the pictures you want to be selected and then used in a package of your choice.

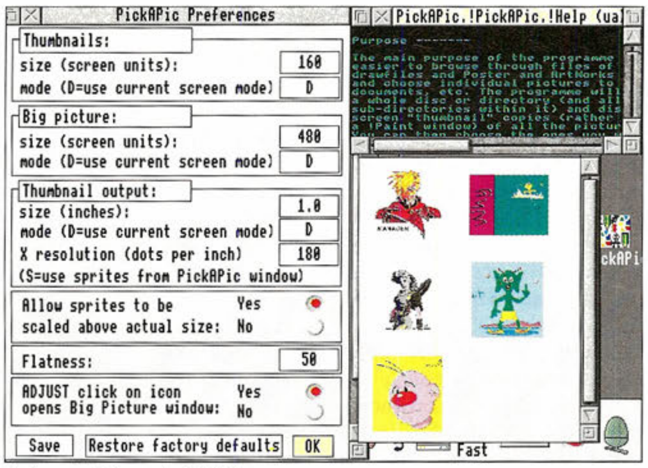
After scanning a directory or filing system, the application presents you with an array of thumbnail pictures from which you can select the piece of artwork you need.

The chosen thumbnail picture can then be expanded so it can be viewed in greater detail, or dragged into your desktop publisher or art package for use. *PickAPick* simply expands the file, saving you the need to look through your directory tree to locate it.

Many different files are supported including *Sprite, Draw* and now *Artworks* files, and a well designed desktop interface allows the program to be used with ease.

This superb program is ideal for desktop publishers but will come in useful for anyone who finds themselves spending hours searching through their graphics collections.

The new version of *PickA Pic* is on the 19th Datafile catalogue.



Pick your pictures in PickAPic

Newerlook

IMPROVEMENTS introduced by Risc OS 3 to the ability to customise the desktop, has spurred the release of hundreds of new PD tool icons and enhancing programs, but until now, these alterations have not been brought together into one easy-to-use package.

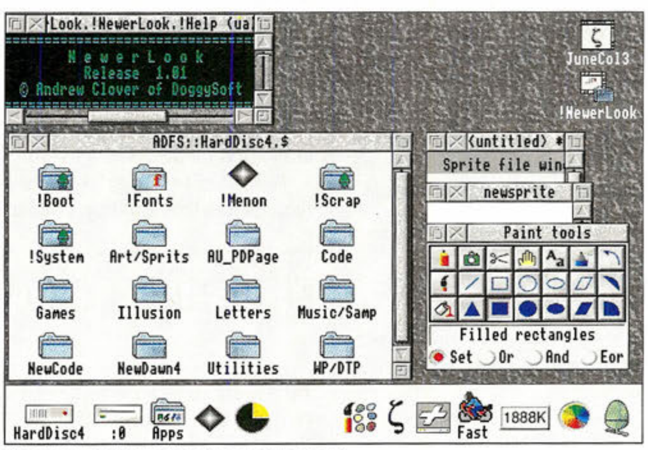
NewerLook, from the talented hands of Doggysoft's Andrew Clover, combines the majority of the best enhancers with a set of completely re-designed icons.

The transparent icon drags offered by programs like *Desktop+* may look fine in high resolution, but in mode 12 they do look a bit ropey.

NewerLook gets round this problem by using an alternating dither pattern to prevent the loss of any detail. Other features include a very smart clock face replacement for the hourglass and some 3D window designs for the Rom applications.

My only criticism of this program is that the rather stylised icons tend to look a bit cartoon like. Having said that, all sprites come in low and high resolutions and use some nice dithering to increase the colour range available.

Newerlook is available for £1 direct from Doggysoft at: Furzefield House, Furzefield Road, Beaconsfield, Bucks, HP9 1PQ.



The new desktop look from *Newerlook*

Resource Folders

THE INCLUSION on Rom of the most useful utilities from the applications discs was welcomed as one of the handiest improvements in Risc OS 3, but proved to be a major problem for education users.

The ease of access for youngsters to the *Alarm* and *Configure* programs, which can be deadly in the wrong hands, prompted Andrew Heckford to write a new front end to the Resources folder.

As well as allowing direct menu access to all three resource directories, the application provides a password-protected lockout system to prevent access to the folder itself or any of the individual apps.

ResourceFS is on disk B216 from the APDL.

Lunchtime

Lunchtime 5 (Wardrobe Racing for Foreigners) is now nearing completion and should be available by the time you read this. Based on the same format as the previous issue, the magazine is recommended for anyone who's enjoyed the rest of the series.

Disc mag fans should also check out several new magazines including Tip Top, Thumper, Archive and Kaleidescope, all of which are available from the Datafile.

QTM

As well as continuing to develop *Q*, The Music player on this month's cover disc, Quantum coder Stephen Harrison is working on a full conversion of *Protracker* from the Amiga.

Full music and sample editing will be supported, with the emphasis on an easy-to-use, but non-desktop format.

HeadFirst PD

Despite being heavily involved in distributing BBC software, HeadFirst PD stocks a fully compressed range of 32-bit public domain programs and wishes to make a further move into the Archimedes scene.

Arc PD discs cost £1.25 each, with discounts for larger orders. Printed catalogues can be obtained for the price of a SSAE. HeadFirst can be contacted at: 45 Cedar Street, Southport, PR8 6N.

In this issue

This month the main feature in the magazine is the Public Domain. Starting on page 35 are 11 pages covering everything from how to get hold of PD software, to interviews with the leading lights in the PD scene.

Although we could have filled the whole issue with coverage of the PD market, I think you'll agree that we've touched on most subjects, but if you have anything to add, do drop me a line.

You can contact the PD page by writing to: Paul Wheatley, Acorn User, Europress Enterprise Ltd, Europa House, Adlington Park, Macclesfield SK10 4NP

Classroom Games

I RECEIVED an interesting letter from Janice Clarke, an IT teacher from Royston in Hertfordshire. Among the numerous questions, she asked if I have a policy on games in the classroom.

This is a tricky one, but I think it's important to differentiate between educational games and games that could be regarded as educational.

Some would argue that arcade games like *Lemmings* and *Repton* could provide students with some real benefits like developing co-ordination and problem solving skills. Frankly, I don't buy it.

In some rare cases it may be true, but in my experience students use games as games and don't actually improve the skills you were trying to develop.

They prefer to solve the problems by a sort of trial and error approach without actually thinking it through.

In any case, I'm sure there are alternative ways to develop these and other skills without resorting to arcade type games.

Tesco & Acorn

IN SEPTEMBER, before I became a regular contributer to *Acorn User*, I wrote a letter to the magazine outlining some of my concerns regarding the Tesco/Acorn 'Computers for School' scheme.

I believe I expressed the feelings of several people, including some software houses for whom, in an already abysmal year, this promotion was almost the straw that broke the camel's back.

Last year, the scheme was a runaway success. 82% of vouchers given by Tesco were exchanged for computer equipment.

This year, the scheme is different in that software is not being offered.

Software houses will doubtless be pleased, but I'm still slightly uneasy that so many schools rely on collecting vouchers, running coffee mornings and holding jumble sales to provide our young children with IT equipment.

Team Welcome

I'D LIKE to take this opportunity to introduce two writers who will be helping to deliver some of the news and reviews in the education pages.

John Woollard has been a teacher adviser for Information Technology for six years. Based in Hampshire, John has taught in primary and secondary schools. He helps both mainstream and special schools develop and implement information technology policies.

Colin Rouse is Deputy Head of Cranbourne Primary School in Berkshire. Originally trained as a primary school teacher, Colin is now well known for his excellent IT work with younger children as well as providing INSET within his authority.

Curriculum Vitae

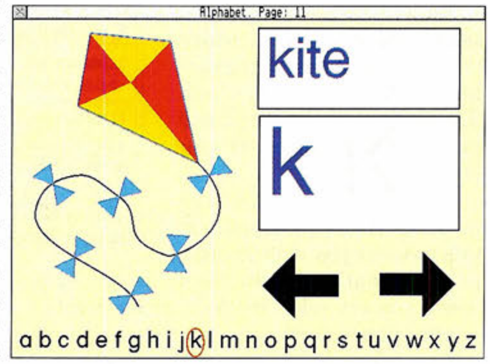
WHEN applying for a job, first impressions are important and in most cases this comes from a Curriculum Vitae or CV.

Mike Smith – who brought us *Cardshop* last month – has now produced *CV* which is designed to help the production of this important document. For £14.99 you get two versions, one for school leavers and one for students in higher education. For those who are not sure what has to be included in a CV, this is a worthwhile program although it won't actually do anything that can't be done on a good DTP. I'm not even sure if it's much easier.

Moira's Alphabet

WHOEVER said that simple things are often best could well have been thinking of *Moira's Alphabet* from the Norfork County IT Team.

Created in *Magpie* and supplied with a reader, each page displays a letter of the alphabet with an accompanying picture.



A digitised voice will speak the word and letter sound when clicked with the mouse, or the letter name will be spoken when the appropriate key is pressed. Some of the pictures include a sound effect or simple animation.

At £14.95 this is ideal for pre-school infants and for the first year of school. Norfolk Education Press can be contacted on (0603) 33276.

Clip Art

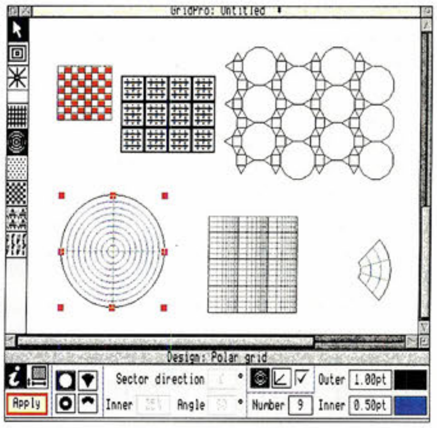
MY COMMENT in the April issue touched a raw nerve with some, but Des Thomas agreed that there is an awful lot of rubbish floating about. So much so that he has produced *'The Clip Art Collection'* which is published by MAPE, who can be contacted on 021-476 1181.

It is an eight page A4 directory of current quality clip art (with emphasis on the word quality), which includes three discs containing some of the very best clip art.

The cost is £6 and an update will be available from Des later in the year, so anyone who would like to offer their wares for possible inclusion should contact him on (0892) 662342.

4Mation do it Again

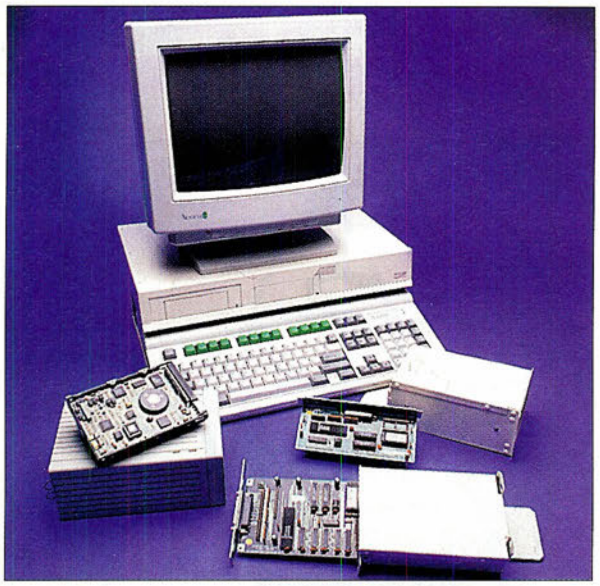
JUST as it seemed that all the possible *Draw* aids had been produced, 4Mation ((0271) 25353) have come up with *GridPro*. This program enables you to easily generate a staggering number of different grids which can be saved in their own file format as well as *Draw* and *Vector* format, and printed as required.



It can produce line grids (linear and log), polar grids, tile sprites and tesselate shapes from *Draw*. This program will, I'm sure, be invaluable to Mathematics, Science and Geography departments to name but three.

You can contact the Education page by writing to: Geoff Preston, Acorn User, Europress Enterprise Ltd, Europa House, Adlington Park, Macclesfield, SK10 4NP

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THE ACORN USER



Queue The Music

By Stephen Harrison

Acorn User is proud to present *Queue the Music* (*QTM*), the fastest and most accurate Sound Tracker player on the Archimedes.

Sound Tracker files, often written on the Amiga, are the most common format for music files on the Arc. This program will play back 4-track Protracker compatible files, employing all the effects embedded in the music.

Also on the disc is a music file by the author of *QTM*. Future releases of *QTM* will enable you to edit files as well as play them; this will be available from Stephen Harrison in due course.

In the meantime, thousands of Sound Tracker files are available from Public Domain libraries. Although *QTM* cannot currently play back all formats available, there are a number of programs which will convert between them such as *TrackConv* from the Datafile.

QTM has three windows: a control window to control playback of the song, an information window and a sample list. It doesn't have a VU meter, dancing keyboard or fourier transform display, but when you're the fastest, most accurate Sound Tracker player around, you don't need gimmicks.

The *Docs* directory in the *QTMTrack* directory – accessed by using Shift-double-click on the *QTMTrack* application – contains useful information about the program and Tracker files in general.

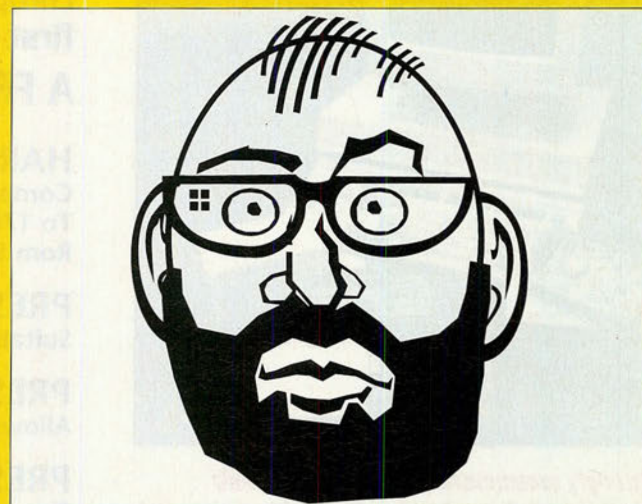
To get the best sound quality out of your machine, the music should be played through an external amplifier. On anything earlier than a Risc PC a hi-fi upgrade is recommended, as the output to the headphone socket is filtered which degrades sound quality.

Although both the *QTM Track* application and the *LonelyN* music are under the *Acorn User* PD scheme, the *QTM Module* player module itself may be copied freely, subject to the conditions in the *Licence* file in the *Docs* directory.

*INFO

More from the home of the small, the wierd and the well-coded. The programs in this directory have been selected by our *INFO team for your entertainment.

Fully described on page 103, the programs include the usual Jan Vibe eye-strainers and one-line wonders, as well as an updated version of P E Marshall's *WorldTime*.



Nigel Gatherer's clip art column

By Nigel Gatherer

This month we have a collection of eyes, noses and throats – and other parts of the face – which can be arranged in *Draw* to create a myriad of mean-looking, comical or just unlikely faces. The *Identifit* file contains the pieces of face, *Instructs* contains instructions and *Examples* contains – go on, you'll never guess...

Acorn User Survey

We want to know what type of person reads *Acorn User*, what you think of us, and what software and hardware you like.

We're not daft, though. We know only too well that running a quick survey program, typing out a small text file and sending the results in to us on a disc can be too much trouble for some of you.

So we're offering a small incentive. We have £500 in cash to give out to some of our lucky readers who will be selected at random from those who reply with the correct answer to our special survey question.

If you don't send your survey in to us, you can't win. More details are on page 31.



COVER DISC

Demo writing



By Mark Hobson

This month we reach the end of our series on demo writing. The demo on the disc is complete with bouncing balls and an *Acorn User* logo, along with the code needed to generate them.

Mark Hobson's article on page 91 of the magazine explains the theory behind this month's display. Once you've read that, you can play around with the code yourself to see what effects you can generate.

If you have an Arm3 machine, you can add music to the demo – owners of one of the slower machines will need to switch off one of the other modules first.

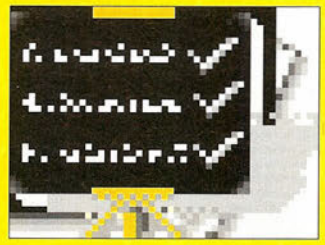
Basic



See page 95 for details of this month's Basic examples. This month's Back to Basics column covers input and output using files.

Because of this, it is best to copy the files from the *BasicProg* directory to another disc before running them, otherwise the program will be unable to save data. Before running either program, double-click on the *SetVar* file in the directory which you have copied the files to. This tells the programs where to find the data files.

National curriculm files



By Geoff Preston

The *EarthWarp* directory contains an *Impression* file associated with the review of *EarthWarp* on page 77.

The *NRA* directory on the disc contains seven documents in *Impression Style* format associated with National Records of Achievement (NRA).

The NRA folder has about a dozen transparent A4 envelopes into which students place a number of documents relating to their personal development during their school years.

The idea is to take the NRA folder to an interview as a sort of overview of what a student has done, what s/he wants to do, where improvements can be made etc. At this moment, students up and down the country will be preparing NRA documents.

Many schools have the students doing this on rough paper before the hand-written sheets are sent to the school office for the secretarial staff to type them up on the proper document.

This seems to me a lost opportunity for students to do some serious word processing. Type in the text to the documents on the disc and output it to a good quality laser printer – letters of thanks from school secretaries can be sent directly to Geoff Preston.

Send us your software!

At *Acorn User* we are very keen to publish reader's programs on the cover disc. Ideally we are looking for original ideas and programs which run in the Risc OS environment, but we will consider all submissions.

We firmly believe that variety is the spice of life, and will be much more interested in a new idea that hasn't been tried before than a re-hash of something that we have carried before.

Under the unique *Acorn User* PD scheme, you retain all publishing rights to your programs, leaving you free to develop your ideas further, or release your software into the Public Domain.

The only condition is that you must not publish the software anywhere else for three months after it appears on the cover disc. After this period you can do what you want – and of course we'll pay you for letting us publish your work, so you can't lose.

If you want to send us any programs, please send a disc and a covering letter to: Acorn User Cover Disc, Acorn User, Europress Enterprise, Europa House, Adlington Park, Macclesfield SK10 4NP. If possible, instructions for using the programs should be on a text file on the disc, and please enclose an SAE for swift turnaround.

We look forward to hearing from you.

What to do if you have a problem with the disc

Our cover discs are thoroughly tested at each stage of production, but one or two faulty discs may slip through. If you suspect that your disc is faulty, do the following to check it:

1. Put the disc in your drive.
2. Click Menu (the middle mouse button) over your floppy disc drive icon, on the left of the icon bar.
3. Click on the Verify option, and a window will pop up, showing the verification process.

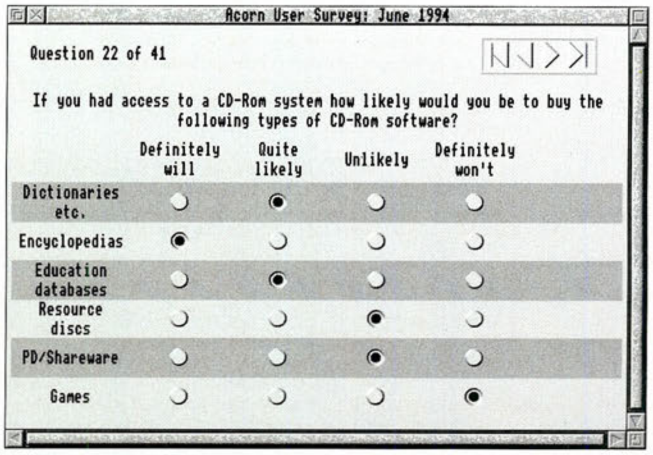
If verification finishes with no errors (the window says 'Disc verified'), then your disc is not physically faulty and you should contact the editorial office at the address given on the contents page.

However, if an error is reported, your disc is faulty and it will be replaced free of charge. Send it with your name and address to: PC Wise Ltd, Dowlais Top Business Park, Dowlais, Merthr Tydfil, Mid Glamorgan CF48 2YY

Most of the programs on the *Acorn User* cover disc are compatible with both Risc OS 2 and Risc OS 3. However the discs are only tested on the new system, and we cannot guarantee that everything will work with the old system. Our advice is to upgrade as soon as possible, as compatability problems will occur more often as software developers make use of the new operating system.

Acorn User reader survey

Win £500 worth of cash



Click on the relevant icons to tell us what you think

Acorn user has always responded to its readers' needs, and the best way we can discover what it is you want from the best selling Acorn magazine is to ask you.

If you want to help improve *Acorn User* so it is even better, follow the instructions on this page to complete our electronic reader survey and awards form.

The results will also help us to compile the *Acorn User* Awards for 1994, which will be presented later this year.

Best of all, though, is that we'll pick six winners out of the hat; one lucky reader will win £250 in cash, and five runners up will each win £50. What are you waiting for? Put in your cover disc, correctly answer the question at the end of the survey and send us your survey answers straight away.

Surveys must arrive by 20 June 1994 to qualify for the prize draw.

How to fill in your electronic survey

The *Acorn User* reader survey is provided on the cover disc, and is simplicity itself to use. Here's a step-by-step guide to using it.

- First, format a blank floppy disc to put your answers on: this is the disc you'll send to us. A disc is light enough to travel through the post with just a first class stamp on the envelope.
- Put the cover disc in your disc drive and click on the drive icon on the left of the icon bar.
- Double-click on the *Survey* application to open a directory window containing the reader survey (*Questor*) and the awards form (*AU_Awards*).
- Copy both these files to your blank disc by dragging them to the blank disc's directory window.
- Double-click on the *AU_Awards* file on the new disc to load it into *Edit*.
- Type your nominations for the *Acorn User* Awards over the underline characters down the right-hand side of the *Edit* window: you will find it easier if you turn on Overwrite mode by pressing Shift-F1.
- When you've finished, save the *AU_Awards* file by pressing F3 and then Return.
- Now load up the reader survey itself by double-clicking on *Questor* on the new disc.
- Answer the questions by clicking on the relevant answer icons in the windows, and move through the questions by clicking on the arrow icons in the top right of the window. If you want to turn off an answer icon, simply click on it again.

Note that some questions require only one answer (round answer icons), some more than one (square answer icons). Also, some questions have many possible answers, so do scroll the window down to check you have seen all the possible choices.

When you have answered all the questions and typed in your address, click Menu over the window and move into the Save submenu. From here you should save the answer file onto the disc you'll be sending us by dragging the icon in the usual way.

Now put the disc in an envelope, and send it to: Acorn User Reader Survey, Europress Enterprise, Europa House, Adlington Park, Macclesfield SK10 4NP.

Conditions

1. To qualify for the prize draw, you must correctly answer the competition question in the reader survey. Although you do not have to answer all the other questions in the survey , please give us as much information as possible.
2. We must receive surveys and award nomination files on or before 20 June 1994 to qualify for the prize draw.
3. The first survey, selected randomly from those in the prize draw, will win £250 in cash. The next five surveys picked will win £50 in each cash.
4. If you have any additional comments to make on the magazine, please enclose them on a separate piece of paper, or as a clearly named text file on the disc.
5. Please check that the disc you send us is virus free.
6. The editor's decision is final.



FREE ADS

● CD Roms, half price, for example Revelation 2, £60. Space Encyclopedia, £30. Hutchinson Encyclopedia, £50. Tel: (0843) 843919

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● PAL coder (Pineapple) converts Arc's output to PAL (Video/TV) for video editing and presentations with software, £50 ono. BBC Mags 1986 to 1989, 21 for £10. Tel: 081-200 6502

● Wanted: basic Archimedes to run educational software for children, 2nd hand.Tel: (0323) 739665

● Archimedes software: Atelier, £23. Bank Manager, £10. Chartwell, £12. T Y French, £11. Tel: (0706) 817570

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● Iron Lord, £10. Twin World, £6. Enter the Realm, £14, or I will swap any 2 of the above for Zool. Tel: 061-928 9602

● Wanted: Archimedes contacts for liberal exchange of PD software. Please send discs & list to Andy George, Tamaris, Lezant, Launceston, Cornwall PL15 9PP. 100% reply guaranteed.

● Acorn Electron, plus 1, plus 3, 3" disc drive, tape drive, joystick, 25+ games, Electron User mags, View and Viewsheet Roms, £110 ono. Tel: (0590) 23011 after 4pm

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● Master 128, £150. Microvitec 1451 colour monitor, £75. Watford 5"/3" drive, £75. Will accept any reasonable offers. Tel: (0272) 326097

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● A3000, 4Mb Ram, stereo colour monitor, learning curve, £650. Armadeus sound sampling card, £50. Colour video digitiser, £50. Tel: 091-413 1522

● Pipedream 3 with manuals etc, £30. Tel: (0222) 530358

● Contacts wanted: Acorn users in all areas. All letters answered. Write to: M Flanagan, 2 Angel Meadows, Oldham, Hants. RG25 1AR.

● Master 128, dual 5" SS/SD disc drives, lots of software, books, Maplin B/W video digitiser, £170 ono. Tel: (0452) 855136

● Acorn A5000 L.C. 4Mb, 40Mb HD, Risc OS 3.10, 2 years old, mint condition including Artworks, Schema and Flexifile, £1200. Tel: 081-660 3797.

● Eureka PD, it's new, fast, and very cheap. Send disc for a catalogue and demo disc to: Eureka PD, 78 Rawlinson Road, Southport, Merseyside.

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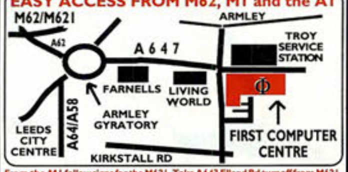
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Star LC24-200 colour..........£187.23
Colour version with 30K buffer expandable to 62K
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Canon BJ10 cartridge......................................£16.16
Double life 500 cartridges...............................£23.82
HP550/500 Colour cartridge............................£23.82
Star SJ48 cartridge...£16.16
Star SJ144 cartridge (pack of 3)......................£36.59
Star SJ144 mono or colour (3 pack)................£14.46

Miscellaneous

Printer Switch Box 2 way................................£11.06
Printer Switch Box 3 way................................£17.00
Printer Stands (Universal)................................£6.80
3 Metre printer cable......................................£5.95

Public property

Paul Wheatley introduces the Public Domain scene and explains the difference between freeware, shareware and licenceware

I find involvement in the Public Domain software scene one of the most interesting aspects of computing, not only as a user but also as a PD author myself. As well as getting a lot out of writing the actual software, I spend a lot of time swapping PD with other users and making new contacts.

Commercial software is the world of deadlines and profit margins, where the final aim is to make some cash out of selling programs. But in the Public Domain the software is made for the sake of the actual programs and the users.

Public Domain begins on my computer the second I switch it on, as a PD utility kick starts another ten PD programs. I think this sums up the usefulness of this massive range of software which costs very little to obtain, but vastly enhances Risc OS.

The aim of this special PD issue is to make your job a little easier by introducing some of the best PD available. We've chosen samples from a few areas which should help to illustrate how PD can compete at a budget level with full blown commercial software, and do things which commercial programs simply cannot do.

The scene interviews show the human side of PD software and reveal some of the many interesting personalities involved.

What is PD?

The majority of PD programs can be obtained for no more than the cost of distribution from a variety of sources including bulletin boards, Internet servers and of course the many PD libraries.

However, not all programs gathered under the broad title of Public Domain software are either free or free from copyright, and several specific terms have been invented to try and classify the different types of software.

The most common of these descriptions is *freeware* software. *Freeware* can be freely copied as long as only media and distribution costs are charged for.



The author retains full copyright over the programs which may not be altered or distributed in a different form.

Shareware is the halfway house to the land of commercial software and is often used by PD authors to provide at least some income for their software without going commercial.

Most shareware programs are distributed in their entirety and a registration fee is charged for their use after a certain trial period. Most shareware titles offer the latest program updates or improved versions of the software making it well worth the charge.

Licenceware is often used as another name for budget software, and has more akin to commercial titles than actual PD software. *Licenceware* is usually distributed by PD libraries, but for a higher charge than PD or Freeware software.

Top five PD

The most popular PD programs have remained pretty constant over the last year or so, with John Kortink's *Translator* digging in at number one.

However the following chart compiled by the Datafile reveals a few changes lower down, as new programs move in.

1: *Translator* (John Kortink)
2: *Powerbase* (Derek & Steve Haslem)
3 : *Dinosaw* (Tom Cooper)
4 : *New Dawn* (Quantum)
5 : *PickaPic* (Hugh Eagle)

PD libraries

- APDL : 39 Knighton Park Road, Sydenham, London SE26 5RN
- Arcaynia : PO Box 1927, Sutton Coldfield B74 3QZ
- Arch Angel : PO Box 41, Exeter, Devon EX4 3EN
- Craig Beech PD : 30, The Deerings, Harpenden, Herts AL5 2PE
- Datafile : 71 Anson Road, Locking, Weston-Super-Mare, Avon BS24 7DQ
- Datastream : 34 Norbeck Close, Great Sankey, Warrington, Cheshire WA5 2SX
- Five Star Marketing : 4 Shepherds Walk, Bushey, Herts WD2 1LZ
- Gem PD : 15 Partridge Down, Oliver's Battery, Winchester, Hampshire SO22 4HL
- Headfirst : 45 Cedar Street, Southport, PR8 6NQ
- Planet PD : 37 Manor Drive, Berrylands, Surbiton, Surrey KT5 8NF
- Skyfall : PO Box 2220, Birmingham B43 5RZ

Share and share alike

Paul Wheatley talks to several key figures on the PD scene

The PD scene is awash with coders and enthusiasts who slave away at their computers, only to release their software into the Public Domain for free. So what is it that makes these people tick, and why do they do it?



Dominic Symes

As I'm putting together this article in the excellent text editor *Zap*, I decided that talking to the program's author, Dominic Symes, was a good place to start.

As well as coding *Zap*, which has just reached version 1.10, Dominic has produced several other PD programs including a utilities module and some fast graphical code.

The crunch question for everyone on the scene is, why write PD software when it offers no return of profits? Consequently, I asked Dominic why he hasn't gone commercial.

'In essence, because you have the freedom to do exactly as you want, and can set your own deadlines. You also get a lot more constructive feedback, which can lead to a better program in the end – if you have the time!

'For many people lack of time and/or money make writing commercial software more sensible and I have no qualms with that.'

But how important does he think PD and shareware software is to Acorn computers and their use?

'In my opinion very important, mainly for the little programs filling in all the holes and inadequacies in the operating system. For example, the *LineEditor* module replaces the system call OS_ReadLine making it far more useable.

'The more freely available software there is, the more attractive the Archimedes becomes. My hard disc boot-up sequence consists entirely of PD software'.

'The most important aspect of software design is having a clear idea of what you want it to do. Nearly all the programming problems I have had boil down to the fact that when I first wrote the routine I hadn't thought properly about all the different circumstances it could be called in and what it should do in each.

'The end result is lots of special cases and spaghetti code. Software should always be designed so that there are no special cases.'

I asked if he favoured the support of upgraded hardware or new Acorn technology in PD and shareware software, or if he thought that compatibility with all machines was more important.

'All PD programs should support the latest hardware/OS version as quickly as possible – that is the only way to move things forward.

'Where there is little effort involved, the program should remain backward compatible while there are still a sizeable number of people with the old hardware.'

'For most PD authors though, it is difficult to get hold of old machines to test their programs on, so it is quite understandable for them to specify (for example) Risc OS 3+ only.

'Lots of people volunteer to test *Zap* but I still have problems checking it on Risc OS 2'. If there's anyone out there willing to help, please drop Dominic a line. I asked if he had anything else in the pipeline.

'I'm still working on *Zap* and probably won't be starting anything new for some time.

'Firstly, this is because I still have a very long list of important things to do to *Zap* – and I think one program with a lot of effort put in is more useful than two half-hearted attempts, and secondly, because it is the last year of my course next year so I'll be very busy.'

Mike Smith

Time always seems to be the biggest enemy of every PD coder – it certainly is mine – although it doesn't seem to have stopped prolific share-

ware author Mike Smith. He's so far coded four major applications and has many more ambitious projects on the drawing board. I asked the coder from California how he first entered the Public Domain.

'PD came in vogue in the early 80s, about the same time I got a modem. Past experience has proven that it's very difficult to distribute PD software without a modem'.

As I knew Mike had experience in writing both commercial and shareware applications, I asked why he coded for the Public Domain and not for commercial software houses.

'I love to write programs and have always had one project or another on the go, consequently always having small projects which are worth someone's time but not good enough to sell.

'It is these bits I have always given away to the Public Domain. I would not consider myself as a PD author, rather a shareware author.

'I really want to work from home and be with my kids; writing software is the best way I know how. Shareware is the "try before you buy", it offers worldwide exposure for free and there is no middle man to pay.

'Still it is an abused system and as soon as the public realises how cheap software would be if they simply began to support shareware, commercial software and high prices would die out almost overnight. No matter what people say, shareware is the only way.'

I agreed that the current state of high software prices is not justified when most of the profits do not even reach the coder. On the other hand, shareware as a system will always be taken advantage of to a certain extent.

Perhaps the answer is in shareware which offers substantial improvements or extras when you register, a system which teams like ID on the PC have found to be incredibly succesful.

'Authors cannot live on air and need money to survive. If there are excellent writers they should be rewarded for their efforts so they have time to write more. The other advantage is the fact that their name goes all over the world.

'One PD author wrote a program and his ideas were so innovative he got scooped up by one of the finest software houses. Fun things can happen when you write PD.'

Thanks Mike. I'm looking forward to your on-going projects, including your human language translator.

John Kortink

John Kortink is another coder with plenty of real experience of putting the principle of shareware into practice. The latest versions of John's hugely succesful *Translator* application are now shareware, so I asked him why he didn't go the whole way and write commercial programs.

'Lately I have begun to wonder myself. It doesn't seem that people appreciate shareware by complying with the author's wishes.

'My main incentive to write PD (or more accurately, freeware) and shareware was that it seemed the way to go to get widespread use of the software; free copying via BBS's and the like gives you that.'

John's latest project is a 24-bit image processing package. Perhaps not surprisingly this will be a commercial application, but he still believes PD is of very significant importance to the Acorn world.

'A lot of PD and shareware is good enough to be put to good use by people, and will therefore encourage computer usage, purchase of commercial software in the same line, etc... It could be even more important if it were supported by users and not by a mostly freeloading user community.'

David Holden

David Holden, programmer and proprietor of the Archimedes Public Domain Library also has strong feelings about PD. I asked David how important he felt PD software was to Acorn computers.

'Absolutely vital. As a member of the Association of Shareware Professionals I obviously have a strong commitment to shareware. I firmly believe in the precept that "one day *all* software will be sold this way".

'The only reason that conventional commercial software still exists is that shareware takes control away from large corporations and puts it into the hands of the end users, and the people who control the "industry" will do everything in their power to resist this.

'Archimedes owners probably don't realise that most of the software that appears with well-known labels is not written by teams of dedicated professional programmers but by ordinary enthusiastic "amateurs".

'If shareware was properly used and understood then these programs would be sold in that way, with lower costs to the users yet making more money for the actual authors'.

The Lunchtime magazine

One group who have so far stuck firmly to freeware software are the authors of the ever popular *Lunchtime* magazine. I asked Neil, Andy and Paul why this was the case.

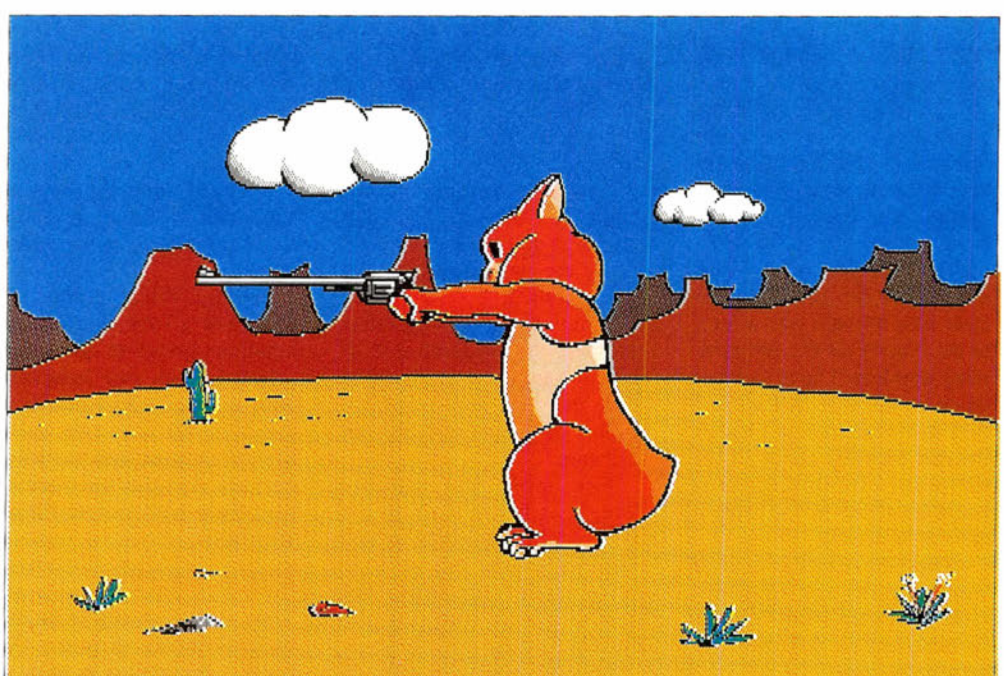
'*Lunchtime*, as with a lot of PD I imagine, was – and still is – written for fun, as a hobby. In order for us to be commercial we would have to meet deadlines and produce regularly. Also, we have a larger potential audience, especially as we are now uploading onto bulletin boards.'

Do they think PD is important to Acorn machines?

'PD is important for all computers. It provides minority software and cheap and easily available software. It also encourages people to program and produce work.

'PD is also a hotbed of new ideas and techniques, as programmers are more likely to experiment with a PD project than with a commercial venture, where time is money.'

Lunchtime has to be the only



The *Lunchtime* magazine

freeware program to be released on both the Arc and Amiga at the same time.

I asked, given their cross-platform experience, how they compared the Acorn PD world with its bigger rivals.

'I must say that I hope the PD "industry" on the Acorn machines fares better than the Amiga or PC.

'On the Amiga, the PD which hits the street is largely dictated by the large PD houses, who form syndicates to push out the smaller PD suppliers by making silly ground rules, such as all members should accept credit cards, something which only larger PD suppliers can do.

'This has resulted in a definite shift of power from the producer of PD to the supplier, who sees his job as deciding what we poor mortal customers should be allowed to buy.'

I asked what they had planned for the future.

'*Lunchtime V* (Wardrobe Racing for Foreigners) will have been finished by the time you read this. *MEditate* (the magazine editor program) is an ongoing project.

'We are also working on a game (arrrrgh!) which is a kind of Celtic role-playing thing – with a bit of luck, sweat, blood, tears, sex, drugs, rock and roll, wine, women and song.'



Diss, Doggysoft's disassembler

Doggysoft

Well, political correctness all round then. Another group with more serious aims is the collection of coders named Doggysoft.

In addition to well-known products such as *The Hacker* and *Diss*, the team has written a whole collection of PD and shareware utilities including *Palette*, *WimpExt* and *DirMenu*.

I asked Andrew Clover how Doggysoft started off programming Acorn machines.

'Most of us programmed the Beeb, but at the time there was no PD system so it was just programming for the fun of it.

'When moving to the Archimedes the prominent PD scene gave us something to do with the programs we made, which was the inspiration to program more seriously and eventually to get together under one name.

'The most important aspect of software design is that the program must be intuititive – easy to use for the complete novice – especially when it goes wrong. There's nothing worse than an incompre-hensible error message.'

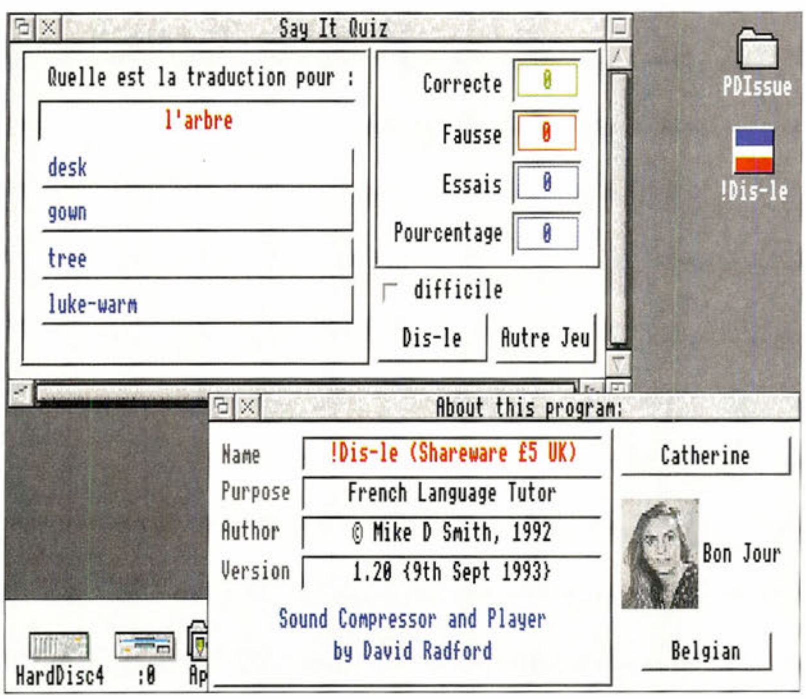
What advice would they give to someone who wanted to start up their own coding group?

'Don't release your first three programs – they'll be embarrasing later on. Seriously, you must have a copy of the Programmers' Reference Manual, and having a modem is a great help in distributing software and keeping in touch with the rest of the Acorn world'.

I asked which new Doggysoft products we could look forward to seeing released in the near future.

'Of course, with the major commercial projects to do, we don't have as much time as we used to, but look for radically different new versions of *WimpExt* and *VEnd*, and less major updates to *Palette* and others.

'Other small programs will emerge at random with no warning, and we hope to have re-written every module in Risc OS by 1997.'



Dis-Le from Mike Smith

On the Archimedes we are fortunate to have BBC Basic supplied as standard. This often provides a user's first taste of programming, and for many will be sufficient for their needs.

For those looking beyond *Basic* the next step often looks likely to be expensive; commercial compilers such as Acorn's Desktop Development Environment (DDE) can appear to be the obvious successor, but it's too costly.

There is, however, an alternative. Looking through the catalogue of any PD Library, among the games, demos and other utilities you will almost certainly find a wealth of programming languages.

These come in many shapes and sizes, ranging from some best considered as an intro-



Programming Languages

Robin Watts and Matthew Segall check out the programming languages available from Archimedes public domain libraries

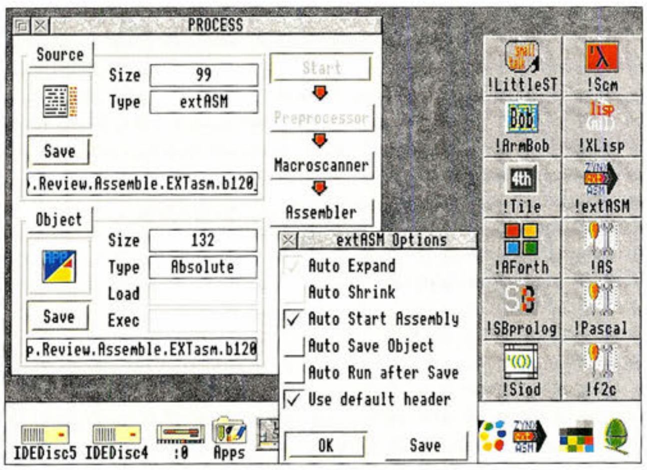
duction to new programming styles, to others suitable for developing full applications.

The only significant drawbacks to PD languages are the lack of support should something not work as you expect, and the fact that some implementations are not as polished as their commercial brethren.

So where do all of these come from? A few are written by dedicated individuals creating their own non-standard languages, but far more have been ported to the Arc from other systems.

Many come from universities that use them for teaching and have been converted by students wanting to use them at home. Another major source is the Free Software Foundation (FSF), originally formed at M.I.T. in America.

The FSF has pioneered a system known as 'CopyLeft' under which anyone can release software for general use and yet still retain copyright. Many of the languages we will mention have been released in this way.



The *ExtASM* assembler runs easily in the desktop without the DDE

GCC

Probably the most significant development in recent months has been the porting of the FSF's GCC C compiler to the Arc. This compiler was originally designed for use on large systems such as Unix but is now available for almost all major computers.

Like the commercial compilers, it provides a full implementation of the ANSI standard C language, although it lacks many of the extra tools supplied by its commercial cousins. As time goes by this will undoubtedly change; already work is underway to provide a desktop front-end.

Due to its origins GCC requires copious amounts of memory to work in, more than is available on all but the most powerful Arcs; it is one of the few programs that does not run comfortably in 4Mb. Help is at hand though, in the form of *Virtual*, a clever program by Nick Smith and Brian Brunswick. This fools the computer into thinking it has up to 24Mb of memory, using the hard disc to act as the extra Ram.

Although this means that everything runs slightly slower (and it can't be run from a floppy), at least GCC can be used on the smaller Arcs.

Another problem is caused by the design of C itself. In order for C programs to be easily moved between different systems, C relies heavily on 'libraries' of frequently used routines.

Further libraries are used to access facilities specific to particular machines (for example graphics and the Wimp). DDE comes supplied with such libraries whereas

GCC is currently supplied with only the bare essentials.

Public domain alternatives such as *DeskLib* by Jason Williams and others are available, but have to be obtained separately. When the front end is finished, it is planned to package everything required for a complete system together, making GCC much more accessible to first-time C users.

A final notable point is that GCC contains a complete C++ compiler, G++. At present there is not even a commercial C++ compiler available for the Arc, so this is certainly a major bonus.

Fortran

Strictly speaking there is no PD Fortran compiler available for the Arc, but at least a partial solution exists in the form of *f2c*. This converts programs written in the language Fortran-77 into ANSI C.

Obviously this is only useful if you have a C compiler – such as GCC above – with which to create the final program. The front end supplied relies on DDE, but *f2c* will run fine from the command line with other compilers.

Pascal

In a similar way to Fortran, while there is no PD Pascal compiler there is a free add-on to DDE that allows Pascal code to be compiled, *DDE Pascal*. As is to be expected from the name, this relies specifically on DDE to work, and hence cannot be used with any other compiler.

DDE Pascal offers a full ISO Standard Pascal compiler and many well documented extensions to the language, allowing large applications to be easily written.

Assemblers

An assembler enables machine code to be compiled from an assembly language program. While few people would espouse programming solely in assembler, it can be used to great effect in speeding up critical parts of programs.

Obviously therefore, it is extremely useful to have an assembler that generates output in a form that can be readily linked into programs compiled from other languages. On the Arc, the standard code format is known as Arm Object Format (AOF).

A PD assembler that produces AOF code is *AS*, by Niklas Röjemo. This is a simple assembler designed to behave like Acorn's *ObjAsm* (albeit with some omissions), and is supplied with a front end for DDE.

Like *f2c* though, it runs quite happily from the command line too. Comprehensive instructions are given in the help file, and full C source is included should you ever want to make any changes.

Another PD assembler is *ExtASM*, written by Eivind Hagen. While this does not (yet) provide AOF output, it has a much nicer desktop front end, runs completely without DDE, and has facilities for both macros and pre-processing of source files.

It comes with a manual, and plenty of examples, but no source. An enhanced version of *ExtASM* is available if you choose to register (though this is *not* required), and costs a paltry £10.

Functional programming languages

One of the most well catered for areas of PD languages in general is that of functional languages, and the Arc is no exception.

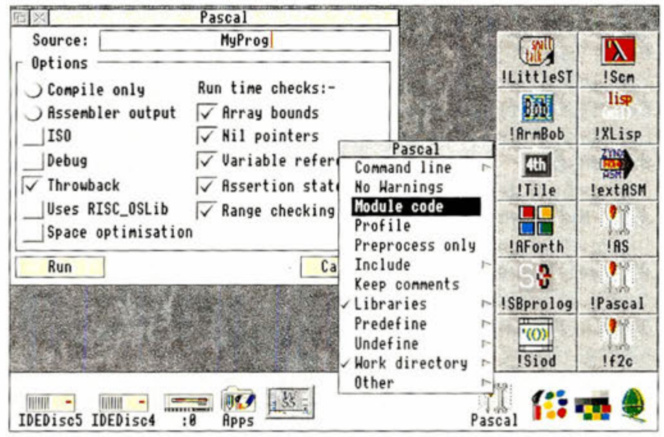
The reason for this is the popularity of these languages in universities for teaching, which has lead to many ports by students.

These languages are not generally suitable for programming applications, and are more usually used for prototyping or research. All of these languages use large amounts of memory, so 4Mb is essential to use them constructively.

Functional languages share a common ancestry rooted in Lisp, a language dating back to the 60s. The most direct descendant is XLisp, designed as a minimalist implementation of this.

XLisp is available for the Arc, packaged as an application that runs from – but not in – the desktop, with good documentation and example programs.

A further development of



DDE Pascal translates Pascal to C, but you'll need the DDE to run it

Lisp is Scheme, and the FSF version has been ported by Alastair Slater. This again is packaged as an application, *Scm*, but takes over the whole machine when run.

A minor modification of Scheme, *Siod* (Scheme in one Defun) is a cut down version, with just the bare basics supported.

SML is one of the most widely used of the functional languages, and the Edinburgh University version has been ported to the Arc by Andrew Stevens. This runs in the desktop and is supplied with full source, but no documentation.

One of the latest generation of functional languages is Gofer, ported by Bryan Scattergood. This is a much simpler language with a very small core set of commands that can be easily extended. It runs in the desktop using the same frontend as *Siod*.

PD versions of Prolog exist for the Arc. One of these is *SB-Prolog*. This runs in a task window in the desktop, and comes with a good manual that touches on Prolog's primary use in artificial intelligence.

Object Oriented Programming Languages

One area of programming that has received much attention in recent times is that of Object Oriented Programming (OOP). OOP stresses modularity and easy extension of programs, and provides many facilities to this end.

This style of programming has so far been under-represented in terms of commercial products on the Arc. However, there are a number of these languages available in the public domain. One of the most popular – after C++ mentioned earlier – is SmallTalk. A cut down version of this, *LittleST*, is available, and is packaged as an application that takes over the whole machine once run.

The language GRS is not widely used. However, it is very well designed and documented, and despite the fact that it doesn't cope with floating point numbers is an excellent introduction to the concepts behind OOP.

It is capable of producing stand-alone programs, so anything written with GRS can be run without needing to load the language. Likewise *ArmBob*, a port of the Bob language with Arc extensions, can also produce stand-alone code, and can even be used to program Wimp applications. It has a syntax similar to C, and comes with full documentation including a tutorial.

Others

Notable among the other languages available, is an interestingly structured offering, *Icon*. This has some unusual concepts, which allow it to express programs that search for answers to problems in a delightfully simple way. Definitely worth a look for the curious.

Conclusion

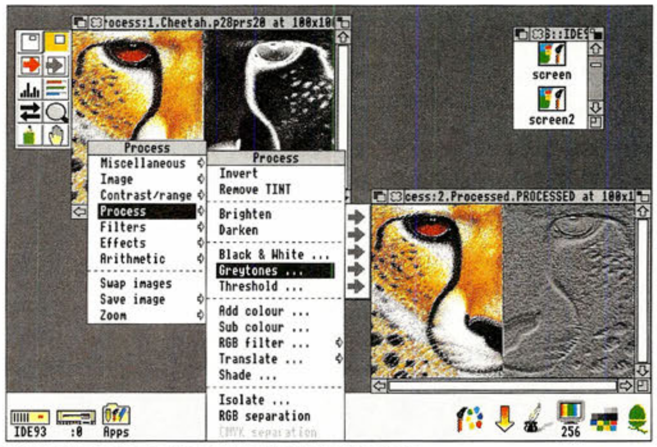
The PD Languages we have mentioned here cover a wide range of the computing spectrum. There are many others we have not been able to squeeze in – Hope, Perl, Awk, etc – but what is certain is that whatever your programming tastes, there is bound to be something out there to suit you.

With regard to Graphics the Public Domain is infamous for its software offerings that most wouldn't touch with a barge pole. But within the vast and diverse mass of mediocrity (and worse) exist some real gems.

These select few are not only good value but often offer facilities not implemented in commercial packages, filling the nagging gaps in the toolboxes of the better-known and relatively costly graphics applications.

Over one hundred programs were assessed, with thanks to The Data Stream.

The *crème de la crème*, including some Shareware, Careware and 'nearly free' applications have been rounded up below and User Warnings are given of the stuff that should be avoided like the plague.



Process **is packed with image processing features**

3D and rendering

The dated *PVray* (Persistence of Vision) and *QRT* (QuickRay-Tracer – a misnomer if ever there's been one) raytracers are the two major contenders in this area.

Both produce similarly adequate results from text data files but take an age to render anything. Also slow but beautifully designed is *3DEditor* by Simon Wilkinson. This creates *Draw* files and *QRT* data for rendering.

These are not really general user applications but more hobbyist programs for those without the resources to invest in commercial products.

KoolCAD, which has only recently reached completion, is Kuldip Pardesi's answer to the low standard of 3D and rendering software on the Acorn.

Presently in a pre-release stage, *KoolCAD* features comprehensive 3D design and editing tools, gourard previewing and full rendering facilities. It will eventually be released as Shareware with a full demo on a future *Acorn User* Cover disc.

Little league

Looking first at graphical titbits, a number of utilities have now landed themselves well-earned places in my 'UsefulApps' directory. On occasion, the under-rated capabilities of *Draw* just aren't enough.

For problems such as the inability to create graduated fills, perspectivise objects and draw freehand, the Public Domain can prescribe a suitable solution, granting any user nearly all the tools found in packages like *ArtWorks*.

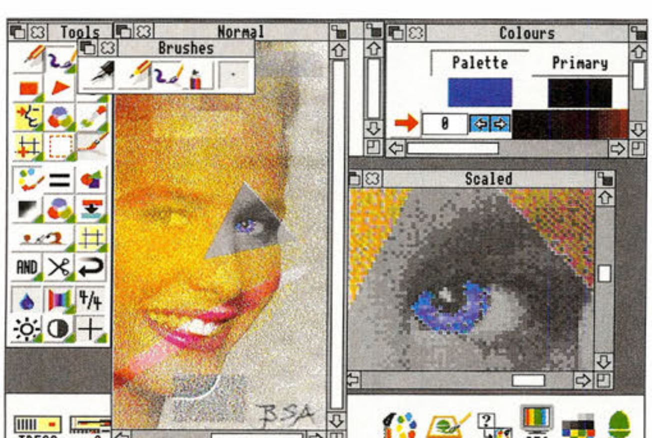
Conversion from Risc OS file types to industry standards, and vice versa, is the territory of image translation software, to which a section is dedicated below, but there are a number of mini-translator applications including *EPSobject, CMG->Draw* (Careware), *DrwCmg, RGB_Spr, MakeTIFF* & *Make GIFF* and *DJPEG,* which will be considered here.

Unlike some of the larger translator-style applications, the aforementioned take up no more than 50K on disc and about 128K in Ram.

These programs give access to the huge image resources available on other computer platforms and allow communication and image transfer to the widely used industry-standard formats.

Other little applications which I find useful are *PixelPal* and *Snapper* (David Pilling's superb snapshot alternative – a definite asset). *PixelPal* is a 32K long program that generates 128 colours by combining the 16 colours available in standard 4bpp screen modes.

As an icon designer, I find an invaluable aid for creating the illusion of shading from just a handful of colours.



FineArt: **easily the best PD painting program**

Painting

There are many fairly powerful and inexpensive commercial packages now available. But for one of the PD painting packages available I would not recommend any, except to the stone broke in desperate need of something more than *Paint*.

With the one exception all the programs run outside the desktop, most are tedious in use, with unconventional menu systems, and limited in resolution. An unreserved thumbs down for *Rembrant* and *Arctist+*, with *Pixar* leading this trailing pack.

The one package that stands out is Barry Alcock's *FineArt.* Not only is this desktop-compliant application in a different league to any other PD contender, in some respects it challenges any other bitmap editor on the Acorn platform, *Revelation Image Pro* and *ProArtisan 2* included.

FineArt is the very first painting program to take full advantage of the 32,000 colour screen modes supported by Computer Concepts ColourCard.

At time of writing, it is the first program that can be described as a 24-bit painting application, though it will soon be joined by other software like the coincidentally named *FineArt* from Pineapple for Risc OS 3.1 and *ProArt 24* from Clares designed for the

To

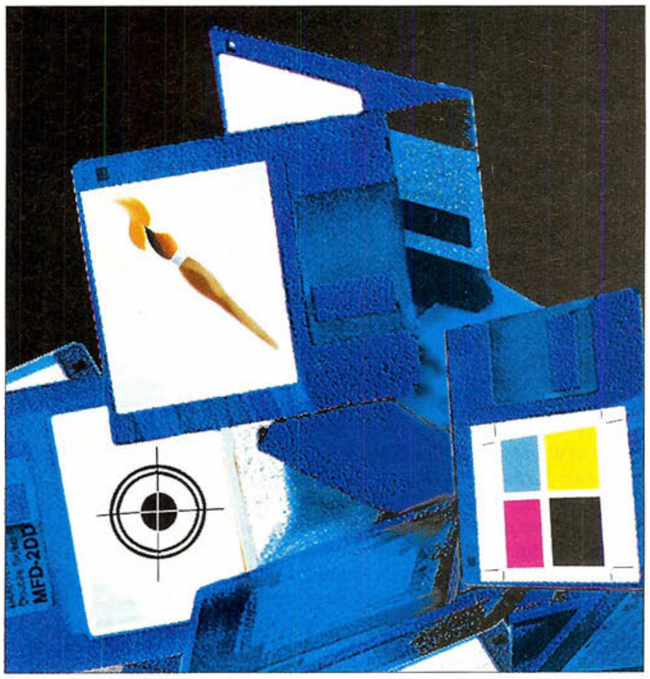
Jack Kriendler examines several graphics facilities available in the public domain

Risc PC. Some of the tools and effects have been compiled from high-level languages and are therefore sluggish in execution. These the author hopes to rewrite in assembler to speed things up.

Once the plethora of tools and their variables have been mastered, *FineArt* can transform the mouse into a number of artist's tools with a feel and sensitivity that has eluded all other programs to date.

The Risc PC products, even in their present finish, already shine, but Barry Alcock's *FineArt* will also work on the now old generation of Acorns, A5000s included, and it must not be forgotten that there is no outlay to be made.

Its main let downs are speed



your art's content

and hunger for memory. Arm3, 4Mb machines are essential, and only with a graphics accelerator like Colour Card Gold can the full potential of *FineArt* be realised.

Drawing packages

There is only one PD vector graphics package, *DrawPlus*. Originally a considerable improvement on *Draw*, *DrawPlus* contains many features now included in the *Draw* of today, together with some CAD and draughting tools only available on infinitely more expensive products like 4-Mation's *Vector*.

Though lacking in its repertoire of artistic tools such as graduated fills, interpolation and freehand drawing, *DrawPlus* can provide, in conjuction with the likes of *Draw* and other PD utilities, everything offered by *Vector*.

Speaking less optimistically, *DrawPlus*, is certainly showing its age. It is unsurprising that more full-blown vector graphics programs have failed to emerge, as the effort required to design and code a PD *DrawPlus* basher would be enormous and without financial reward.

Importing, exporting and processing

I have never quite discerned why so many applications in this category are actually PD. Perhaps it is the result of established software houses not realising the needs of graphics specialists who are forced to design their own crude tools to 'do the job' and subsequently refine and improve their utilities to become meritable, user-friendly applications.

Whatever the reasons, the best of these applications are not only useful but essential for the lack of commercial equivalents.

John Kortink is responsible for the PD *MakeGIF* and *Make TIFF* mentioned above and the shareware applications, *Translator* and *Creator*, which apply themselves to image importing and exporting respectively.

In its latest guise, *Translator* v.7.21 has support for converting over 30 of the common and more exotic bitmap file types into standard sprite or 24-bit Clear formats.

Included are some basic colour balance, dithering and image-orientation facilities, but nothing to write home about in terms of image processing.

Creator allows AIM, TIFF, GIF and JPEG files to be formed from Risc OS bitmap filetypes.

AIM 2 (Delft University) and Henrik Bjerrgarrd Pederson's, *Process*, have so many interesting image-manipulation facilities that only a dedicated article would do them justice.

FYEO (For Your Eyes Only) v.2 must be mentioned as possibly the fastest JPEG decompressor of them all. Output sprite quality is nothing special but its speed makes it pleasing and easy to use.

Usage

PD, Shareware and Careware have varying conditions of use and registration.

Most of the recommended software should be available at all good PD libraries and Bulletin Boards, and will cost you between very little and nothing at all, so what have you got to lose?

Within the niche of image processing, PD software excels and in the other areas, well, you might just find an application or little utility that's just the thing you've been looking for.

Recommended software

Ray Tracers & 3D

PVray	Renders from text description files
QRT	Renders from text description files
DKBTrace	Renders from text description files
KoolCAD	3D Designer and rendering/raytracing
3DEditor	3D Designer with output to *Draw* & QRT

Vector Graphics

DrawPlus	*Draw* plus more
Drop	Perspectivises *Draw* objects
Shade	Graduated colour fills for *Draw*
InterDraw	Interpolates two *Draw* paths
FreeHand	Sensitive freehand drawing tool
Italicer	Italicises fonts in *Draw*

Bitmap Graphics

FineArt	24-bit painting package
PixelPal	Shows how to mix 16 colours to get 128
Marble	Texture generator

Import & Export

DrwCgm	*Draw* to CMG converter
CMG->Draw	CMG to *Draw* converter
EPSobject	EPS to *Draw*

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Extend	*ExtendV2*	*FCodex*	*Funky*	*Garfield_I*	*Garfield_W*
Handler	*Icon*	*Image*	*Image2*	*Increment*	*IRQFix*
Link	*Machine*	*MHelp*	*Mode87*	*Module*	*MonitorDat*
MyMod	*NetManager*	*NetStatus*	*NewDesk*	*Parasite*	*Penicillin*
Poltergeist	*Runopt*	*Shy*	*Sprite*	*SpriteUtils*	*System*
System2	*Taskmanager*	*T2*	*Terminator*	*Thanatos*	*TrapHandler*
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It's time to play

The games available for the public domain are plentiful. Steve Atherton bowls you over with a pick of the bunch

Thunderstrike

Thunderstrike is a flight sim and to elaborate further it shows just what can be achieved using the Flight Sim Tool kit. If you are fond of electric guitars then this is really your thing, a very classy product with some great attention to detail.

Set in the future, you must pilot any one of the dozen or so designs made available and set about ridding the land of various dubious influences.

Missions are highly involved and you must pick your targets very carefully so the war will not prolong.

For instance, on one of the four missions you must destroy some Russian airbases that have appeared in Asia. Take out just the bases and they reappear a little later, with the depots situated nearby sending out carriers for an instant repair.

Remove the depots and you can enjoy some close, and not so close, range destruction of government property.

If you can put up with the guitar then the great scenery and range of futuristic craft available makes this a very desirable set of discs to own. Highly recommended.



Chainsaw massacre – but don't try this at home

Ragnorok 2000

You *are* James Donaldson, so close your eyes and the force could very much be within you, as the intro music suggests a more than passing resemblance to the theme from *Star Wars*.

Ragnorok 2000 is a flight sim with a difference, as you are playing for keeps attached to the eigth Elite Task Force in deep space with a near impossible task ahead of you.

The task is to rid the Galaxy of an invasion force that has suddenly appeared. After much dramatic thunder and lightning on menu selection you can choose any one of five missions, with full briefing and some fantastic gameplay maps that show exactly what needs to be done.

An instant play feature bypasses most of the briefings should you be attempting the same mission for the umpteenth time and this balances out the rather annoying disc swaps that have to be performed during some quite frequent selections.

A good game with some nice touches in the futuristic scenery and the enemy ships. Not bad.

Product: F-18 Hornet

Once again it's flight simulation time. This one is based on the American multi-role aircraft the Hornet.

Detailed missions outline some pretty demanding pilot skills, as the plane is difficult to control during combat or precise flying. The fixed allocation of weapons for each of the six missions is a nice touch, with a good result being put down to some serious co-ordination and a lot of luck as the sky can get very crowded at times.

Mission briefings are the most detailed I've seen for a while, with different target surveillance systems on hand to assess the awaiting dangers. Good detail while flying means navigation isn't impossible by just looking for landmarks. Not a bad effort but the weakest of the three flight simulations reviewed here.

Dinosaw

Dinosaw is 15 levels of pure fun that doesn't sap the computers memory and has some great features that are normally found on the more expensive games on the market.

Armed with a chainsaw your character must be steered through puzzles, baddies and of course plenty of humorous moments.

Keyboard control allows for the control needed for the character and with several baddies on the loose in each level you will need some quick reactions.

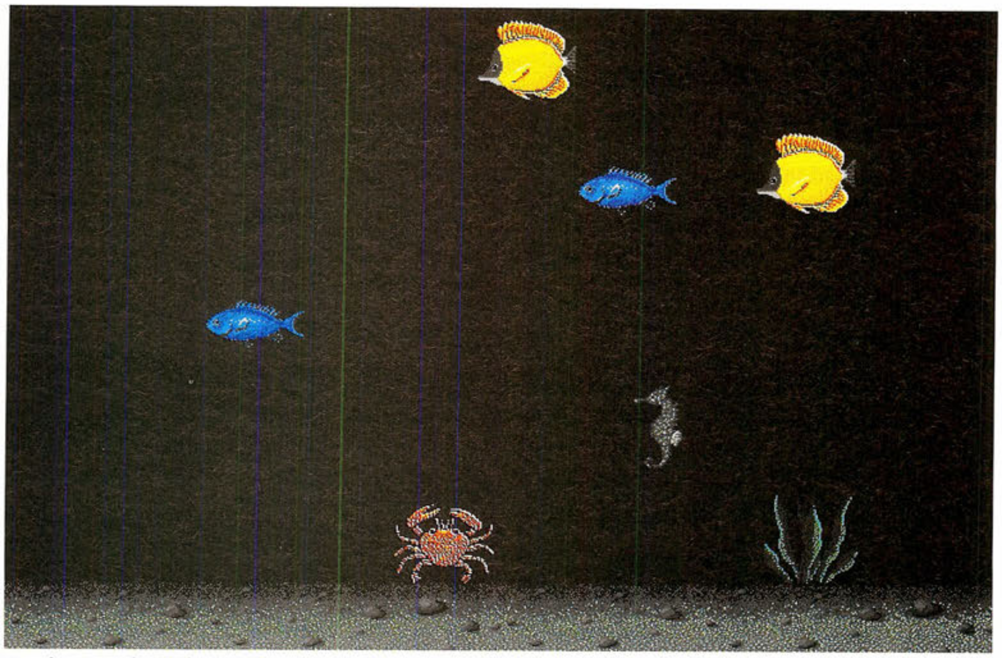
Without doubt the best feature of *Dinosaw* is the split-screen two-player option which allows two players to explore the terrain at their own speed.

This game has to be great value for your time and is very little money. *Dinosaw* easily competes with some of the offerings that are being thrown around at the £20-£30 mark at the moment. Essential I would say.

All these games are available from the many PD libraries operating in the UK.

I have found that PD can be conveniently divided into two categories. The first consists of those utilities that are really gimmicks and stay on your hard disc for about a month, until you decide that you can live without them or that their function can be done just as competently by something not so wacky. These also have generally very bad and uninformative *Help* files.

The other category is a little more difficult to describe: it contains those programs which make you think, when and if, you read the *Help* file, 'Hey, now why has no-one ever thought of that before?' This article features some of these programs aimed at enhancing your desktop.


You don't need your bait and rod for this type of fishing

Desktop enhancers

Colin Woolf looks at a number of PD utilities to improve the Risc OS desktop

Application launchers

If, like me, you couldn't see the need for an 'application launcher', just wait till you're doing a piece of DTP and find that you have so many windows over the screen that you can't find the directory window with your favourite handy utility in.

With an application launcher you go to the icon bar and, through a simple menu or hot-key, load up what you need.

Do persevere with this, it may take some time to configure but, believe me it saves you time and some head scratching.

Menon is an application launcher and has been on my icon bar for some time, but when I try to access my database or a *Eureka* file, I always get the error 'Filer has not seen this application', meaning that I have to travel down the directory tree to open the filer window with the database in – hang on a minute, isn't that what *Menon* is supposed to do for me?

This has been fixed with version 2.06, by setting an option 'Initiate' which (when *Menon* is loaded) causes the boot file of the application to be seen, thus informing the Filer where the parent application lies in the directory tree.

IconDir differs from *Menon* in that it needs very little setting up, supports small icons next to each menu entry and has no virtual desktop. *IconDir's* author claims to have written this as he got fed up with setting up *Menon*.

Assuming you want to duplicate the file structure that already exists on your disc then I agree, it takes much less setting up. With *Menon* however, your menu tree can be very short and surely that is the point in either of these – to give you quick access to items deep in the tree.

Icon bar indicators

When you do try and load an application, it is really annoying to be told 'Not enough memory'. So why not use a Free Memory indicator?

This selection is down to personal preference, but a quick flick through what's available reveals three good ones.

ArmState, as the name suggests, shows you the state of your Arm3 cache as well as showing you free memory. It resides on the iconbar in place of the Tash Manager.

Indicator has a nicely designed window showing you free memory, CPU usage, time, VUmeter and info on screen mode. However, it can only display one of these at a time.

F1Desk manages to combine most of these into one neat but small display. *F1Desk* warrants further examination as it contains a lot of other features which resemble other desktop enhancers such as *Filer+* or *Stickybrd*.

Following on naturally from these programs is the Virtual Desktop. This allows

the user access to a much larger screen. It basically scrolls to the left, right, bottom or top of the standard screen.

Instead of a stack of windows one on top of the other, you place them around the outside edge of the screen and move the pointer to where you want to go and the screen scrolls in that direction.

Don't get lost though. With *Menon v2.06*, you can switch this facility on and off, making this program very handy. *Larger* and *Largeness* also provide Virtual Desktop facilities with a map, so you can see where those windows have gone.

Screen utilities

When I first got my Arc, I read the manual to find out how to change the initialisation banner on start-up. I had visions of swooping eagles or faces winking at me – but no, I had to be content with 'Risc OS 3'.

How boring, why can't we have the same possibilities that are available on a PC? When ever I see someone else's PC, it starts up with some flashy message with a voice over *as well*.

Well, those of us who wish to personalise our machines – and there seem to be a lot of us, judging by the plethora of screen savers, newlook icons etc, etc – may be just about to strike lucky.

A natty little routine by Cy Booker, *WelcomeA*, generates a module that provides a new banner sprite and sort of zooms and swoops it from the edges to the centre of the screen at random. This is a very slick and fast animation, but you'll need an Arm3 to appreciate it. Talking of screens, screen-savers are a popular way to improve the look of your desktop, while you're sitting there thinking of what to do next.

How many screensavers are there? Well, after wading through the index to a couple of PD libraries, you will find that there are plenty to choose from.

They can be sorted into groups, ranging from those that just change the screen into pretty patterns that we have all seen before, to those that provide a great deal of control over how the thing works. As a designer and artist, I obviously like the well drawn and visually stunning ones.

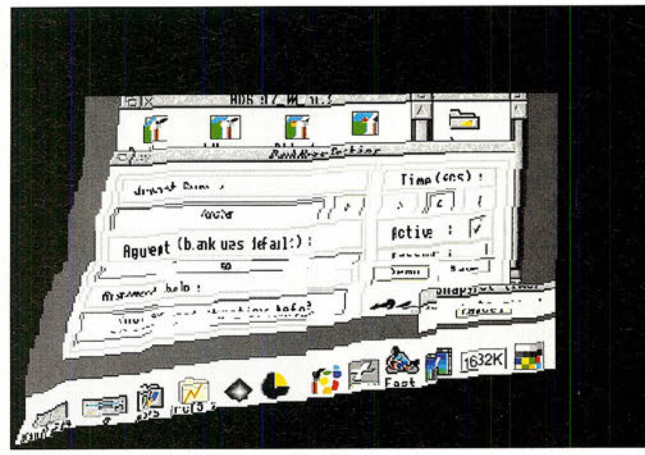
We have all seen 'the fish', *Out to Lunch* has the best one, which has one minor fault in that the sand at the bottom doesn't move.

This could lead to the dreaded burn-in but personally I doubt it, and if configured with a total screen blank after 5-10 mins it's not a problem.

Who leaves their screen weaving pretty patterns for longer than that? Anyway, apart from the fish, *Lunch* does nothing more than the rest.

Hangfire is another like this but with some great firework displays. *DarkHorse* on the other hand provides you with a fair degree of control by allowing you to alter the 'arguments' that control the random behaviour of the routine (try altering the one to slow down the girl flashing on and off the screen).

Unfortunately you cannot save the arguments that you alter, which does rather spoil the point of it all. My money still goes on *DarkHorse* for the user control, the wide variety of *good* savers and the smooth front end.


No work today with a directory like this

As a guide, they use roughly the same amount of memory, about 32K, for the better type of display. I've just discovered the ultimate – as I have the fish from *Out to Lunch* configured on my machine and am also testing *DarkHorse*, the effect when they both come in is *magic*.

Help with pointers

Of the really useful PD utilities, mention must be made of anything that speeds up the rate of moving about the desktop and performing tasks. Application launchers are one way.

If you discover that your pointer has disappeared off the end of your desktop don't worry, it will appear on the other side.

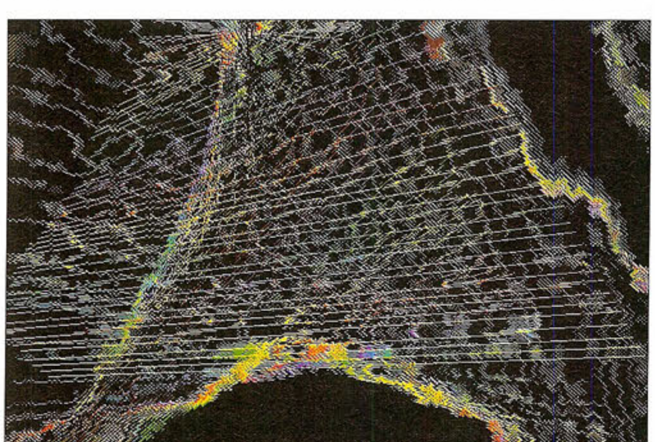
PtrWrap differs from *WrapPtr* and *Wrapper* as it cleverly allows you to alter the screen edge detection sensitivity. With a sensible speed, these utilities are useful as they do save moving across the desktop from one side to the other – you just flip over the edge, go round the back of the monitor and, hey presto, your pointer is on the other side.

Finally – having problems finding that piece of immaculate PD? If like me you have several discs of mixed programs, then *DiskLib* is the answer.

It is incredibly easy to use and the search facility is quick. *DiscCat* on the other hand, I couldn't get the hang of.

It is a suite of programs with different icons on the icon bar for either the data or the creation of the database – too complicated.

The most important thing is to try out every desktop enhancer you can find. You might decide that 90 per cent of what you try is rubbish, but the other 10% could revolutionise your desktop.


Lines before your eyes with this screensaver

Program List:

Program	Datafile disc	APDL disc
Menon v2.06	UT9	B051
Largeness	UT106	B071
WelcomeA	UT138	-
Bannerz	UT142	-
Lunch	UT35	B165
Hangfire	UT52	B126
DarkHorse	UT106	B187
PtrWrap	UT41	B112
WrapPtr	UT92	-
Wrapper	UT22	-
DiscCat	UT14	B051
DiscLib	UT134	B061
ArmState	UT76	-
Indicator	UT103	B165
F1Desk	UT135	
IconDir	UT95	

Design systems

I do feel puzzled at the lack of concern Acorn shows towards those of us who have taken them at their word and bought *Impression* as a serious means of earning our livings.

Impression has sold *consistently* over the last three years as a serious, head-on competitor to *Quark XPress*.

A story in your own magazine (October 1993, page 31) concluded that *Impression* was almost as good 'for a lot of uses, the acknowledged advantages of *XPress* in handling irregular run-arounds and rotated text – which are almost the only ones (though I think tracking, auto drop caps and mouse-click text scaling are more significant - PR) – simply aren't worth five times the price'.

My *system* wasn't much cheaper overall than the Mac system I should otherwise have bought; in fact the hardware was *more* expensive, especially as I was virtually forced to buy a colour monitor where monochrome ones were readily available for the Mac.

In my opinion the Acorn DTP system is essentially superior to the traditional Mac with its *XPress/PageMaker/Ventura* and *PostScript* system.

Acorn's unitary fontware and direct drive laser printer are more elegant and predictable than any system which depends on conversion to PostScript (with the attendant uncertain about matching type fonts).

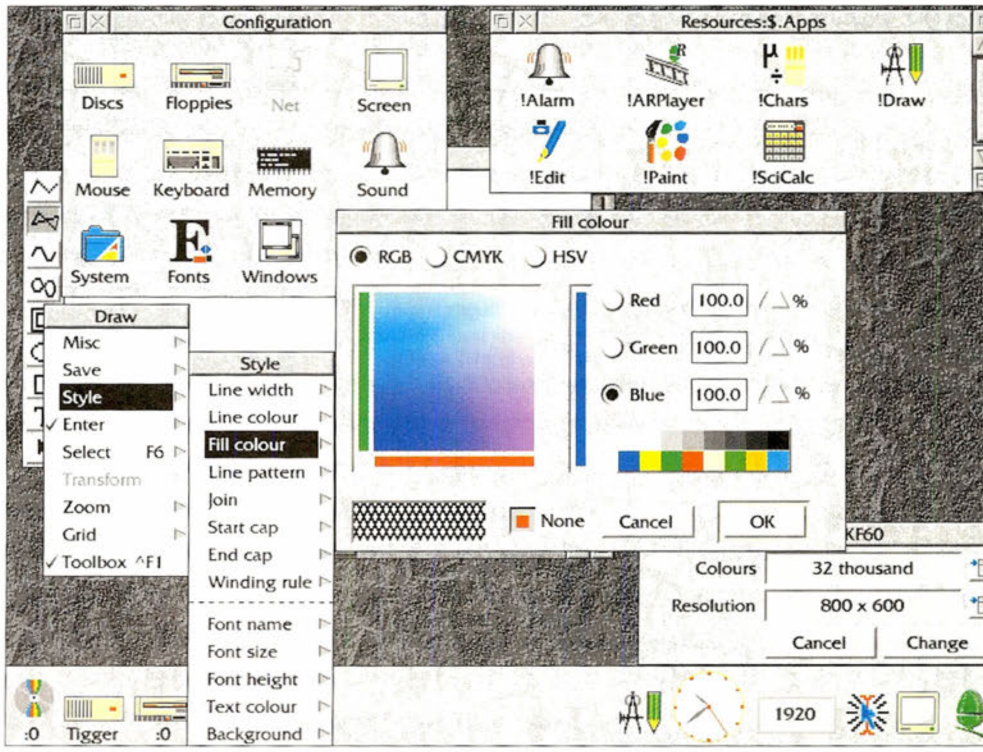
It would appeal to more people if information was more readily available – in particular, information about image-setting bureaux and about dealers who can discuss DTP requirements with the same authority.

Mac dealers are often graphic designers or typographers themselves; they can't tell you whether the machine has a 16-bit or a 32-bit processor, but they understand the application.

Peter Robertson
Tewkesbury

It's precisely because DTP is such an increasingly important area of the Acorn market that we've introduced a monthly DTP column (see page 23).

Combine that with the release of *Impression Publisher* (see page 57) which tackles a number of the omissions mentioned above, and I think it's a safe bet to say that the low to medium cost DTP niche could become Acorn's next stronghold.



Risc OS 3.5 might be good news for some, but not for all

Super Scribe

I teach neural nets to our final year mathematics students, and I thought you might be interested to know that I have used *Scribe* in a computing exercise and assessment for them. It is very useful for the students to see them used in a real application.

Incidentally, there is a slight technical error in the third article (February 1994). Although a Hopfield net has a limited capacity, a multi-layer perceptron with one hidden layer can solve any classification problem, provided there are enough units in the hidden layer.

This was proved by Cybenko and others in 1989. The problems experienced by your author are probably due to one of two causes: either insufficient hidden units, or too small an effective dimension of the feature space provided by the 8x8 grid.

State-of-the-art neural net OCR tends to use some form of topological coding of the letters for the feature space, but your simple approach works surprisingly well.

Steve Ellacott
University of Brighton

Its nice to see our programs being useful in the outside world. And thanks for the correction, though to be honest I got lost around the 'multi-layer perceptron'...

Squirrel search

James Harrison must have been punch drunk after his 12 rounds with the databases in April's *Acorn User*.

He says that *Squirrel* doesn't allow searching on the multi-line text fields. It does and I think this facility combined with *Edit*-type editing and the wordwrap now available is one of the best enhancements from my point of view.

I have used previous versions and was beginning to wonder if I'd wasted my money, but this much-improved version has wafted my doubts away. I shall enjoy exploring the more esoteric bits after I've completed the setting up of my 'bread and butter' databases.

J W B Greenwood
Bingley

Which just goes to back up James Harrison's opinion that *Squirrel* is one seriously powerful database, wafting doubts notwithstanding.

Happy now?

I am very happy to see that finally someone has commented realistically on Acorn in general. I am, of course, talking about Mark Colton in April's Moxon Interview.

Many of the letters I have read express either complete and total love of Acorns, or almost pure hatred. Mr Colton's remarks ring far more true with me than many remarks I have heard over the years.

When I first got a Risc OS-based computer back in 1990, I remember translating a small utility from 6502 code on my old Electron, and quite frankly I was amazed how easy and straightforward the process was on the Arc: Risc OS was wonderful.

Since then, I have recommended Arcs to all those who have expressed dissent about DOS and System X on the PC and Mac respectively.

OK, so I hear cries from Mac fans saying 'you just can't place System 7 and DOS 6.2 in the same category – System 7 is far superior.' So it is, but not when compared with Risc OS 2. Note I use Risc OS 2, not Risc OS 3. When Risc OS 3 came out on the A5000, to tell

the truth I was crestfallen. The press, *Acorn User* included, had heavily hyped the arrival. But what's wrong with it?

Well, it's slow, uninnovative and clumsy. Badly-written, essentially. It operates with the performance ratio of Windows, and in use it feels like it is written more in C than in machine code.

'But look at all of its new features' cry the masses. Well, I am. The Pinboard module is an absolute disgrace. OS_Heap still has no garbage collection and the module area still fragments, badly losing valuable memory.

File conversions have been forgotten. Why not have a SWI Convert_File to convert from one file type to another, with a SWI Convert_Register for adding modules to provide other additional file type conversions?

A proper Task window with graphics should be added and *all* non-multi-tasking programs should run in it by default.

A new 'Risc OS compliant' badge should be created where companies can sunburst their software and, for a fee, Acorn will review it and, if it meets with the guidelines, it will be given the Acorn seal of approval. This would encourage vendors to make all their products consistent.

More standard SWIs should be included in the operating system, so, for example, SWI "WimpLib_SaveBox" would put up a completely compliant save box and then handle all the necessary calls. This would be a great boon for those not using C. And that's another thing. The use of C should be discouraged. I know about all the wonderful advantages it has, but boy, does it waste memory. Arm code, as a machine code, is extraordinarily easy to write and since it is faster than C anyway it makes sense.

To return to the state of the market: let's face it, Acorn and friends need to wake up. The Power PC, if it is even as half as good as the hype suggests, will cause major changes.

Acorn, as it stands, will suffer with these changes. Every time the PC world moves ahead, Acorn should be just one step ahead, like in 1987. If it doesn't do that, it will lose out.

Niall Douglas
County Cork

See Viewpoint.

Not again!

That's it. I am sick and tired of having to upgrade my machine. Fair enough, the upgrade from Arthur to Risc OS was well worth it, but I still believe that Acorn should have worked harder to make sure Risc OS was ready at the Archimedes' launch.

Then came Risc OS 3, which cost the earth (unless you broke the rules and bought an A5000 upgrade) and slowed down the machine, making an Arm3 essential.

OK, you didn't have to upgrade, but have you noticed that if you ring up for software support and you say I've got Risc OS 2, then the operating system always gets the blame: third parties no longer feel able to guarantee compatibility with Risc OS 2.

And now we're looking at a whole new version of Risc OS on the new machines. This is even scarier: deep sprites from the new machines can't even be loaded on the old operating system, the hardware can't be upgraded to 24-bit colour however hard you try, and hardware designed for the Risc PC won't work at all on the old machines.

Maybe I should buy a PC after all.

James Phillips
Motherwell

See Viewpoint.

Business please

I am writing to ask you about business users of Acorn computers. I know you have a very large readership, myself included, and if you have any information on any of your business readers such as addresses, I should be very grateful if you would pass this on.

We are at present working on an application with specific interest for businesses and any help you can give would help us in our development.

I continue to enjoy your magazine which is both informative and interesting.

David Borchard
London

We've been planning to introduce a regular feature for our business readers, but it has proved quite tricky to track down those of you who use Acorns in businesses.

If you would like to write to David at the address below, then hopefully the response will be enough to justify a Business column. Let's hope so.

David Borchard,
Iconomix, Mote Mount,
Nan Clarks Lane,
London NW7 4HH

Drop us a line at Acorn User, Europress Enterprise Ltd, Europa House, Adlington Park, Macclesfield SK10 4NP

Viewpoint

It's like an editor's dream: two letters in the same month slagging off various aspects of the operating system, but both from different angles. Talk about opening a can of worms.

On one hand we have Niall Douglas saying how awful Risc OS 3 is, and that he regrets ever upgrading, and on the other James Phillips is moaning about the number of operating system upgrades there have been since 1987. Three in total: Arthur to Risc OS 2, Risc OS 3 and Risc OS 3.5.

Well, I think James Phillips and his ilk are barking up the wrong tree. Seven years, three upgrades: that is not, by anyone's standards, a large number.

DOS has gone through considerably more changes in that time, including versions which were declared unusable. Windows is on version 3 (with a number of different subversions within that), and Chicago, the fourth incarnation, is nearly upon us. Moan about upgrading if you like, but don't be unfair.

There is one group of people, however, who do have a good reason to grumble when a new operating system comes along: schools with large numbers of machines.

It's bad enough upgrading one machine, but the cost of upgrading, say, 20 machines is not trivial, especially when Acorn managed to price its Class upgrade pack – ten sets of Roms and one set of manuals – as more expensive than buying one full upgrade and nine A5000 chip sets.

However, having a go at what you actually get in your upgrade is much more valid. A considerable amount of effort and money is being poured into operating system design by Microsoft and Apple, and there *is* a danger that Acorn will be left behind.

There is no standard method of implementing OLE – Computer Concepts had to invent its own system; there is no support for virtual memory – Digital Arts' new *PhotoShop* beater, *DAPicture*, has had to incorporate its own system to enable huge 24-bit pictures to be edited; development packages on the Arc are far behind those on the Mac and PC; the problem with the module area not compacting is serious, and *can* be solved, but hasn't been; and there are plenty more areas.

So the operating system can be improved. But remember that Risc OS is light years ahead in areas such as drag-and-drop, the icon bar, speed (whatever Niall says about it) and ease of installation.

Chicago has a number of features which Acorn users will find very familiar; they say imitation is the sincerest form of flattery, and for my money I'd rather use Risc OS than Windows or System 7.

Mark Moxon

Widen your horizons

Near laser quality A3 printing for 1/10th of the price of an A3 laser printer

The BJ-230 and

RISC OS 3 Turbo DRIVERS

The BJ-230 is a black and white inkjet printer from Canon that handles a variety of paper sizes up to A3. It comes with a built-in 80 page sheet feeder and power supply. With a print density of 360dpi the print quality is hard to distinguish from a laser printer and better than any other competing black and white inkjet printer.
A sample A4 print out is available on request so you can make the comparison. And like all inkjet printers the BJ-230 is whisper quiet and both easy and cheap to maintain.

Price:
The A3 BJ-230:
£289 + £10 p&p + VAT (£351.32 incl.)
The A4 BJ-200:
£229 + £10 p&p + VAT (£280.82 incl.)

The BJ-230 is only suitable for use with RISC OS 3.1. Suitable for all models of Archimedes, but a minimum of 2 Mbytes of RAM is required.

Computer Concepts Ltd

The BJ-230 is supplied with Computer Concepts' super-fast TurboDriver printer drivers - printing and returning control on average between three and ten times faster than the standard Acorn drivers or the Ace PROdrivers. The RISC OS 3 TurboDriver works with !Printers, which means for example that it can handle rotated text and sprite printing. If also offers full Postscript style control over screen density, screen angle and screen type to achieve the best possible print quality.

We are so confident about our combination of Canon BJ printers with TurboDrivers that we offer a no quibble, money back guarantee.

REVIEWS

“This is probably the best inkjet printer yet. .. whether used on its own or with the excellent TurboDriver, the BJ-200 is a fast printer and the print quality is simply superb. A winner.”

Acorn User

“The TurboDriver excels at its task of providing quick, high quality output.. ..in my opinion it is well worth the money and will more than pay for itself in terms of better productivity.”

Acorn Computing

The package includes the BJ-230 printer with TurboDrivers software, a cable, sample A4 sheets of high quality inkjet paper.



E&OE Prices & descriptions are subject to change.

GADDESDEN PLACE, HEMEL HEMPSTEAD, HERTS. HP2 6EX. TEL: 0442 63933 FAX: 0442 231632 EMAIL: Info@CConcepts.co.uk

In brief

CDFast and a template editor for your Risc OS machines

CDFast

Supplier: Eesox
Tel: (0223) 264242
Price: £25 + VAT + £2 carriage

Cambridge-based CD-Rom specialist, Eesox, has come up with *CDFast*, a Risc OS software utility which can speed up some CD-Rom drives by almost 50%.

What's more, it only costs £25 and it's compatible with any CD-Rom drive on any Acorn computer, including the new Risc PC range, which runs Acorn's CDFS.

CDFast is a cache utility which basically stores and accesses file parameters in main memory so that they don't have to be repeatedly re-read off the CD-Rom.

This means the CD-Rom drive's head mechanism can spend less time hunting around for small bits of data and more time reading the target data.

Cacheing is especially useful for CD-Rom drives because they typically have much worse track-to-track seek performance than, say, a hard disc drive. Hard drives can take as little time as 10ms to find a target track, while even the best CD-Rom drives are 15 times slower and usually more than twice as worse.

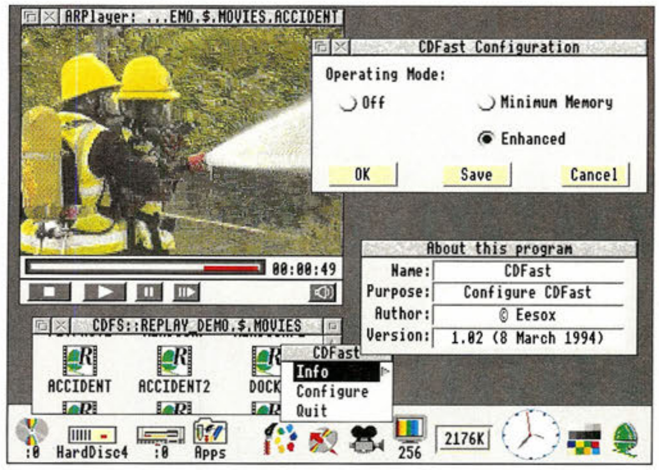
Reducing the need to find scattered but repeatedly accessed data pays big dividends, as *CDFast* clearly demonstrates.

Eesox test data shows that *CDFast* can reduce the time taken to do specific CD-Rom access tasks by as much as 46%.

This was a test which involved opening the root directory on an Acorn Education Directory CD-Rom in a Hitachi CDR1650S drive.

With *CDFast* switched on in Enhanced mode, the task time reduced from 6.16 seconds to just 3.43 seconds. Enhanced mode uses 36K of cache space, which is remarkably economical compared to some disc cacheing systems around.

If every byte is precious there is a Minimum Memory mode which uses just 8K of cache space. The same test still returned a useful 34%



Quick access in *CDFast's* enhanced mode

improvement in Minimum Memory mode.

In general, when intensive accessing of many short files is required, *CDFast* can be very effective at speeding things up.

We verified typical speed benefits of roughly 25% on average using a variety of drive makes, and while the actual benefit varied from drive to drive there was always a useful improvement in intensive search operation times.

Straight loading of large contiguous files benefits far less and in fact we did notice that *CDFast* actually slowed some operations like this.

However, in the main, *CDFast* is a remarkably effective utility at a bargain price which all Acorn CDFS users should seriously consider.

Mind you, a disc cacheing facility should really be in the operating system itself as standard.

Ian Burley

RiscView

Supplier: Simon Glass
Address: PO Box 834, Landbeach, Cambridge CB4 4DG
Price: *RiscView* £9 (site licence £19), *RiscView Professional* £29 (site licence £69)

RiscView is a template editor. For those of you who only use and never write programs, this means that it will create and edit Risc OS windows such as the *Edit* search and replace dialogue box.

It comes in two versions. *RiscView* itself is a fairly basic template editor. As icon and window data can be edited using dialogue boxes rather than a complicated menu tree, *RiscView* scores heavily over *FormEd* in ease of use. Several icons can be selected and edited at one go, which is another bonus.

In fact, the program does everything I could want a template editor to do. Aside from one or two confusing dialogue boxes I have no complaints, although the program has few frills.

The frills come with the professional version, *RiscView+*, which brings the concept of styles to template editing.

Both windows and icons can have styles governing their attributes. For example, all the icon styles given in the Risc OS Style Guide are available in a default file, loaded in when the application is run.

This really takes the pain out of template design. I no longer need to remember what border style and validation string to use for a 'default action' icon as *RiscView+* does it for me. I can create my own style for 'Info' windows and simply apply it each time I need to.

As would be expected, altering a style affects the appearance of all templates which use that style.

All icon and window attributes can be altered individually, so there is nothing restrictive about using styles.

Style information can be saved in *RiscView* files by *RiscView+*. At present these files can only be read by *RiscView+*, which may not seem very useful but is.

Templates can be designed using *RiscView* files, with a library of standard ones on hand, and only saved as a standard template when the design is finished.

A demo disc is available for £1, should you want to see what the program is capable of.

With the ability to open a number of template files at once and freely copy icons and templates between them, *RiscView* is the template editor I have waited ages for.

RiscView is based on *S-Base's* template editor, so users of this program should know what to expect.

The style system – and the inclusion of a printed manual – makes the Professional version worth the extra money.

David Matthewman

The best impression

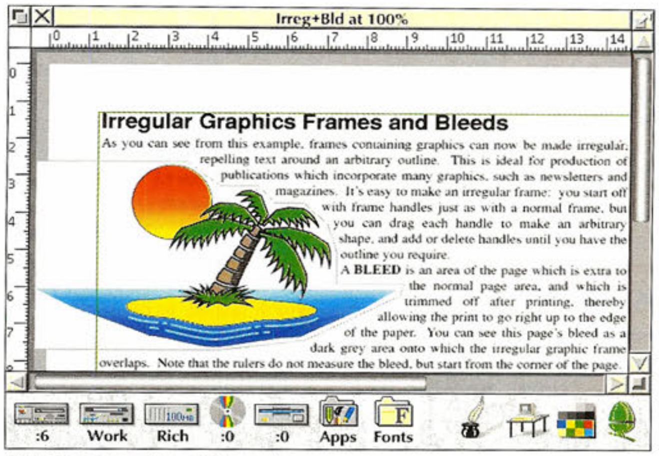
Following-on from the review of Impression Style in January, Richard Hallas and Steve Powell examine Impression Publisher, Computer Concepts' answer to Quark XPress

With the advent of Risc PC and Acorn's emerging successes in new markets and publishing arenas, and with *Impression II* getting decidedly long in the tooth, it is high time for a truly professional new DTP package to appear for Risc OS. So has Computer Concepts' *Impression Publisher* been worth the wait?

Publisher comes on seven floppy discs comprising the main program and all the extras which are already supplied with *Impression Style*, namely *WordWorks*, *TableMate*, *Equasor* and a small selection of fonts.

The *Publisher* manual, at 330 pages plus an additional 22-page Commercial Printing Guide, is generally well-written if not particularly inspiring. Of far greater inspirational value is an excellent (but short) demonstration document, supplied on disc, entitled 'Designing with *Publisher*.'

This document provides a stimulating introduction to some of *Publisher*'s new features, and also presents some good general advice on basic typography and layout.



Text flow around an arbitrary shape

In use

Publisher looks indistinguishable from *Style*, and uses only marginally more memory: a total of 640K initially. Compared with *Impression II*, the differences are striking. Not only are all the features of *Style* present, but also those of *Impression 2.5*, which was only available in Germany. A particularly good point for users of *Impression II* is that *Publisher* still feels the same in use, even though some of its features have changed greatly; it's obviously a development of an existing program.

The most striking additions are the tool bars, the high quality 'freebies' such as *WordWorks* and the on-line help, all of which are in *Style*.

The real differences between *Publisher* and *Style* become apparent when you start digging deeper into the program. Among many relatively minor new features, three stand out as being of particular importance: irregular frames, colour processing facilities and professional printing options.

The first of these is the most exciting-sounding, but is in some ways a slight disappointment. The idea of irregular frames is that you can import a graphic into a standard rectangular frame and then edit the frame outline until it follows the shape of the graphic. Any text flowing up to the graphic will then be smoothly repelled around its outline.

In *Publisher*, any graphic frame can be made irregular simply by choosing a menu option. The frame outline turns blue, and you can then drag the frame handles to alter the outline.

Points can easily be added and deleted, and the graphic tool, which normally operates on the image within the frame, can also be made to rotate and scale the frame as well if you click with Adjust rather than Select. The whole operation is very smooth and intuitive.

The main shortcoming at present is that only graphics frames can be made irregular. It would be tremendously useful if the same facilities could apply to text frames, as this would then allow text to be printed at an arbitrary angle by rotating the frame.

There is also no way of positioning frame points precisely, and it is not possible to have curved frame edges.

However, all is not lost. Computer Concepts has done the hard work of sorting out the irregular text repel and graphics clipping, so I expect that irregular text frames will be the next major addition.

Graphics

Without doubt, one of the most impressive things about *Publisher* is its excellent graphics handling. Very comprehensive printing options are provided – see later – and *Publisher* is also fully compatible with the new full-colour Risc PC desktop; some of the shots here show it working in 32,000 colours.

The graphics colour mapping editor is a splendid tool which works as quickly as the machine can draw the graphic, and if you make a mess, you

OPI supplement

Possibly the most significant feature of *Publisher*, from a professional viewpoint, is the forthcoming release of an Open Pre-Press Interface (OPI) Supplement. This is a method of including high resolution images without the need for vast quantities of memory.

The image is scanned on a high resolution drum scanner at a bureau and they produce two copies, one very high resolution image of 1200dpi or over, which they keep, and one lower resolution image which they send back to you on disc.

You use the low resolution image in your document and scale, rotate and crop it as required, then when you send your separation files to be typeset, the bureau replaces the low res image with the high res one.

I haven't had the opportunity to test OPI in *Publisher* but have used it in *Quark Xpress* with no problems, and as *Publisher* supports DCS files – which are collections of EPS files – everything should work as excepted.

can go back to the original at any time.

This is one of the few places where mistakes can be undone, though. It would be nice if *Publisher* could incorporate perhaps a single-stage undo, or at the very least an abort for certain operations.

Text options

Publisher provides complete control over position and size of underlining, subscripts and superscripts. Another new bonus is the auto-indenting ruler, which makes the creation of lists much easier.

Guide frames, missing in *Style*, are back in *Publisher*, and at last there is a page grid for accurate alignment.

A handy new option is the ability to duplicate frames across arbitrary x and y offsets. In combination with the page grid, this provides an excellent new way of creating tables and the like.

Whereas tracking is available as an effect in *Style*, it is also a style attribute in *Publisher*. However, it's still 'absolute': *Publisher* won't make any intelligent decisions about when to apply tracking.

In many respects this is excusable, as auto-tracking is one of the most abused facilities of DTP packages on other platforms, and it's easy to inadvertently make your documents look a mess.

Of course, *Publisher* has *Style*'s facilities for keeping paragraphs together, but it's a pity that there's still no proper orphan control to prevent single lines occurring at the tops of columns.

A few features were not able to make it into the first release, though hopefully, they are planned for inclusion soon. These include irregular text frames, non-leadering tabs, embedded grouped frames, a 'make null' command for frames, and drag-selection of frames.

Conclusion

There is no doubt at all that *Impression Publisher* is a superb program and includes a tremendous range of powerful professional features hitherto lacking on any Risc OS package.

Although a mere fraction of the price, there is no reason why it cannot be compared with the likes of *Quark XPress*, although the latter certainly has some powerful features which *Publisher* still lacks, the reverse is also true, and no-one would suggest trying to employ *Quark XPress* as a word processor.

Publisher, on the other hand, is perfectly capable of that. This is an important point which is easy to overlook.

Publisher is fast and professional, and the upgrade price is ludicrously cheap. Even at full price, the program represents exceptional value.

Bearing *Computer Concepts*' track record of a very generous free upgrade policy, there is absolutely no reason to wait before buying *Publisher*. It is by far the best DTP package for Risc OS.

Richard Hallas

Professional use

Impression Publisher offers an array of new features aimed at the professional publishing market, though a cursory glance could mislead you into thinking little had changed.

Behind the scenes, 32-bit colour support, image colour control facilities and PostScript output screening facilities have been introduced. There are, however other features worthy of note.

The new page grid feature offers the possibility of aligning text across multiple frames/columns. Frames can snap to this grid and the grid separation is adjustable from the Master Page dialogue which also offers a page bleed facility.

The new printing dialogues offer the option of including both crop and registration marks on the printed output and the option to print a colour accuracy/dot gain control bar on the separations may be available on later versions.

This dialogue also offers the possibility of generating process colour (CMYK) separations. Each separation can be set to overprint and PostScript half-toning screen angles and densities are fully adjustable, with several of the more common printers and typesetters supported by preset tables.

These tables also contain colour correction information for the printers and can of course be customised for your own needs.

At present only process colour separations are available, though spot colour capabilities might be included in a later update of the package.

Professional printing methods

There are essentially two methods of adding colour to your documents. The first, Spot Colour, is a method which adds a specified colour as a solid colour to your documents.

This colour is matched to a particular ink using a system such as the Pantone ColourMatch Swatches which give a representation of the ink as it would appear on the finished document.

It is possible to add as many spot colours to a document as you wish, but since each colour must be applied by a separate plate, an image of that plate needs to generated, known as a separation. Each colour requires a separation of its own, including black.

The other, Process Colour, relies on the use of three inks known as the subtractive primaries – Cyan, Magenta and Yellow – to generate an approximation of all colours by combining them in varying amounts, usually expressed as a percentage, where 100% means full colour and 0% means no colour.

So, a full colour picture can be generated by creating a separation for each colour and printing them on top of each other.

When all three are combined together at 100% you should theoretically get black, but due to impurities inherent in the inks, you usually get a dark muddy brown, so an extra colour is added. This is known as the Key separation and it is printed using black ink. The names of the colours give rise to the abbreviation CMYK.

However, printing is not just a case of separating the colours on the page. There are a number of errors possible with printing technology, and these have to be solved by the separating software.

Registration errors are caused by slight movements of the paper as it moves between the plates that print the separate colours. This can result in the colours being slightly offset from one another.

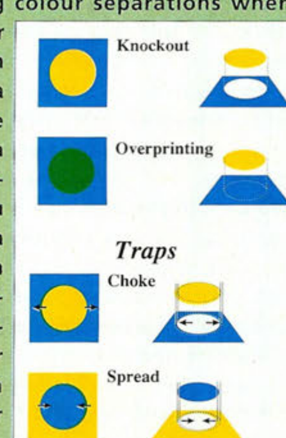


Registration error: the yellow plate is offset to the right

This can be significant when printing using knock-outs, since a slight shift can result in slivers of white paper appearing where two adjacent colours should meet.

Trapping is a method which compensates for registration errors when printing. It does this by thickening the lines between adjacent areas on different separations and thus creating a small overlap. The eye doesn't see this overlap and thus the paper can drift a little without leaving a blank area.

Knock-outs are blank areas generated in the underlying colour separations where another colour overlaps. An example is a yellow circle printed on a cyan background. If you don't create a white hole in the cyan background the yellow will appear green when printed after the cyan.



The process colours can of course be used as spot colours to produce separations for spot colour documents, but this isn't exactly what I'd describe as a satisfactory method of working.

The separation system generates knock-outs automatically, even in images. There are no facilities for generating traps, which results in the need to ensure perfect registration during printing.

However, it is worth pointing out that with *Aldus Pagemaker* you have to buy an expensive separate package called *TrapWise* to perform this function, and that *Quark Xpress'* trapping facilities are fairly simplistic to say the least, so to criticise *Publisher* for this is unfair, especially when you consider the price differences.

Trapping can be done manually at the plate-making stage by a bureau. So this shouldn't present major problems for most users.

The separation routines also employ Under Colour Removal and Grey Component Replacement to counter a variety of common problems inherent in the process colour printing method.

The colour support has been enhanced and support for 32-bit CMYK images is comprehensive. The Graphic dialogue offers access to the colour map editing facilities, the usefulness of which cannot be overstated.

The colour map can be edited in a variety of colour models, primarily the master palette and RGB, but HSV and CMYK models are supported for TIFF images imported through the new Graphics Loaders and *ArtWorks* files (see separate box).

The white balance can be adjusted via the colour map dialogue and though there is no direct method of defining the mapping curve, the system employed in *Publisher* is extremely effective.

Individual colours can be altered in the RGB and CMYK colour models, thus allowing for some limited image enhancement and extensive colour correction of individual images to minimise disparities between them.

The dialogue also offers the ability to create tints and duotones by defining the colour range of the current image. This is a powerful and impressive feature considering the limited facilities comparable packages offer.

The Graphics dialogue also offers a variety of PostScript screening options via a Typesetting dialogue box. This offers control over screen density, screen angle, spot shape and overprinting options for individual graphics.

This means that each image can be reproduced using an optimum screening method for the image, independently of the other images and text. This allows the PostScript output to be fine tuned to an unparalleled degree.

Graphics loaders

A loader for TIFF files is provided with *Publisher* as standard, but the new Graphics Loaders offer enhanced TIFF loading, as well as facilities to import PhotoCD, JPEG and Clear images into *Style*, *Publisher* and *ArtWorks*.

The loaders are installed inside the System folder, and are invoked when required. If you drop a JPEG image into a *Publisher* frame, for example, the JPEG loader window will open to offer you some decompression options, and when you click on 'Process' the image is loaded.

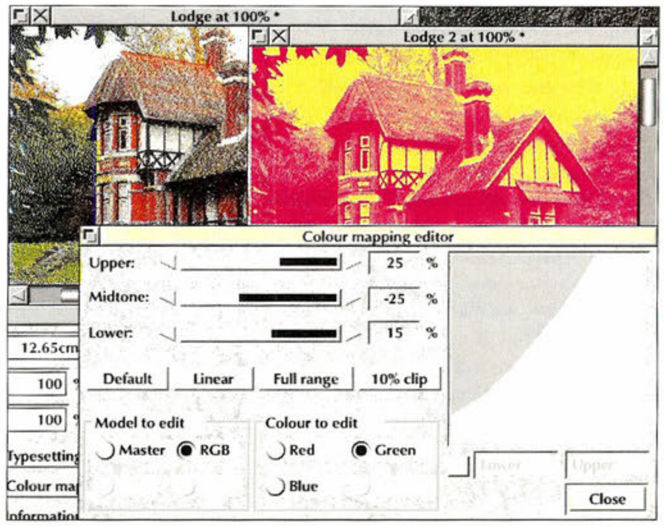
Each file can be imported in either 8, 16 or 24-bits per pixel, and PhotoCD images can be imported at any of the six sizes/resolutions each image is available in.

Each image is converted into a Deep Sprite, which is a 32-bit format but is confusingly called 24-bit since eight of the bits are for other information.

Each loader gives a predicted output size in Kilobytes and thus offers an opportunity to prevent the dreaded Insufficient Memory warning appearing.

24-bit images are frequently larger than 1Mb and for those intending to work extensively with such images, memory neds to be seriously considered.

Publisher is an outstanding package in its own right, but to fulfil its potential the Graphics Loaders are a necessity.



Using the colour mapping editor to change colours in a true-colour TIFF file

Conclusion

Publisher performs well when compared to products such as *PageMaker* and *Quark Xpress*. It isn't quite as polished as either, but then again it is respectively £300 and £400 cheaper than these products.

Neither package offers a great deal more for the money apart from the fact that they are Mac compatible.

It may be worth mentioning at this point that *Publisher* has also undergone a performance increase, with its text reformat some 30 times faster than *Impression II*.

Having used a PowerMac for the last few weeks I have to say that *Quark* doesn't appear as quick and responsive as *Publisher* and I'm using an old Archimedes.

Admittedly *Quark* has yet to be ported to the native instruction set of the PowerPC, so perhaps it isn't a fair comparison, though remember native *Quark* for the PowerPC will cost £1000 + VAT.

I still feel *Publisher* lacks certain features, although rotating text may be included soon. Drop caps are to remain a manual task, and although this often produces better visual results the time saved by automatic generation is not insignificant. These are of course niggles rather than important omissions and as such detract little from the impressive (excuse the pun) performance of the package.

All of the important omissions are, I suspect, a result of needing to have the package ready for the *Acorn User* Show and will all be amended later.

Publisher addresses many, if not all, of the criticisms raised by printing and publishing professionals about the Acorn platform.

Acorn's DTP credentials have been considerably enhanced by the additional facilities *Publisher* offers, and as a result Macs no longer offer significantly better quality for the price penalty incurred.

Apple would do well to watch the Acorn platform and spend less time resting on their laurels. The software and hardware advantages they have held for so long are shrinking.

Steve Powell

Product details

Product: Impression Publisher
Supplier: Computer Concepts
Tel: (0442) 63933
Price: £169 + VAT
Upgrade from Impression II: £29 + VAT
Upgrade from Style: £70 + VAT
Upgrade from Impression Junior: £80 + VAT
Upgrade from certain other WP/DTP packages: £120 + VAT

Product: Graphics Loaders
Price: £39 + VAT
Supplier: Computer Concepts
Tel: (0442) 63933

GAME SHOW

It looks like my work has once again been made difficult in trying to find a game that doesn't match up with my rather high standards.

All the games like last month's have passed with flying colours and should your games budget be in danger of dwindling, then please find a cunning way to deflect certain important expenses in favour of these disc-based offerings.

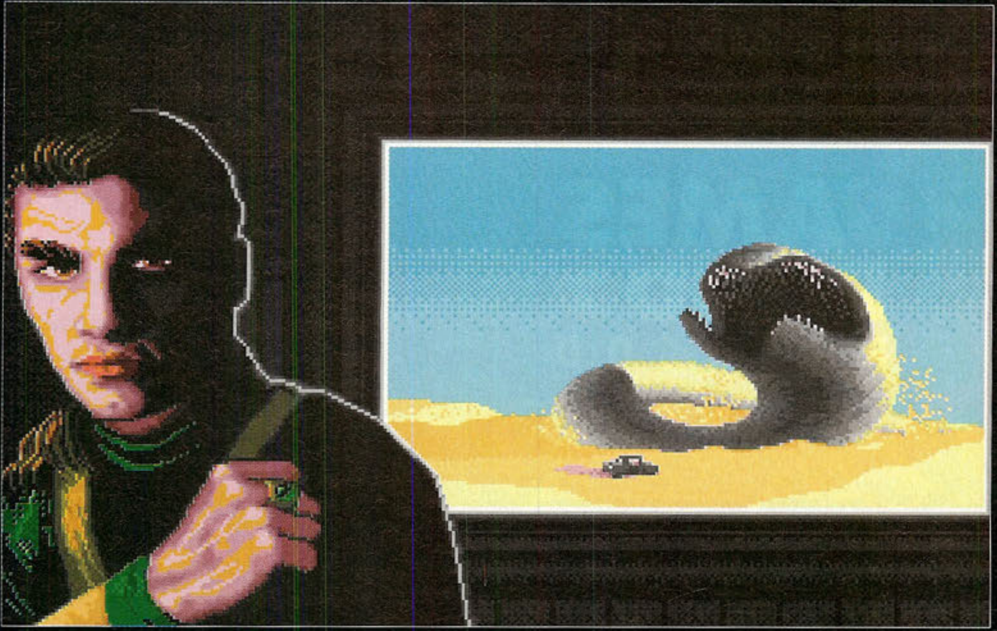
In keeping with the hectic world of being a Games Editor, I have just written this after attending our Spring *Acorn User* show in Harrogate.

Things are looking very very good, fellow gamers. It seems at last the needs of the Acorn market are being met with some classic games, both original and conversions, destined for Spring and Summer releases.

Krisalis is planning a stunning release with *Power Monger*, a population manipulation game much in the same vein as *Popolus* and to a certain degree *Mega Lo Mania*.

If the result is as good as other formats we could soon be playing God, with serious consequences for your subjects.

Also destined for release is *Cannon Fodder*, a great excuse to release any frustrations with a weapon of your choice.



Gamesware has released it answer to the *Play it Again Sam* syndrome with a package named after the signs of the Zodiac. The first release is *Aries* and contains *Hamsters*, *Quizmaster*, *Blowpipe* and *Square Route*. More of this next month when a full review is planned.

Also from Gamesware was the announcement of a June or July release of *DuneII*, a smash hit with the thinkers on the Sega, PC and Amiga formats.

The game will be based on the PC version and for those of you unfamiliar with the concept, you command a spice harvesting force (no sting in this one thank goodness) and must protect and eliminate the other houses that are doing the same.

Management of weapons and attack forces, troops and buildings are required to win through and complete the progressively harder tasks set out for you. Can't wait!

Also at the show, and destined for a review next month, was Oregan Developments *Magnetoids* which sees you piloting a fighter through some heavily populated space-ways, with a cockpit that looks like something in the *Elite* style.

The attendance at the *Acorn User* show, especially the Saturday, showed a passionate interest in development for the Acorn and the games stands assured me that games players are growing in numbers.

Steve Atherton

Cheats

James Pond2 – RoboCod

At the middle of the first level there are five objects, lips, ice-cream, violin, Earth and snowman. Collect all the objects in the above order and you will have spelt the word LIVES. The result is nothing less than infinite!

Magic Pockets

Here's a serious helping hand for this highly-rated platform cutesy, with some easy-to-enter platform codes.

Caves:	
4736	3
6332	5
Jungle:	
2175	6
4151	8
5226	10
6924	12
Lakes:	
1520	14
4589	16
1265	18
Mountains:	
2571	19
2437	21
6961	23
5465	25

The code for the final level is useless as you cannot complete it without obtaining the necessary 100,000 points at the tail end of level 26. To conquer the last level fire non-stop at the wall until you collect 5,000 points or more.

Use a large snowball to kill the first enemy, collect the silver star, repeat until you have another 5,000 points, kill the remaining threats and obtain a gold star. Finito!

Pipemania

To help you with some very nasty lead piping horrors, here's the necessary codes to allow the free-flowing flouride to reach it's destination and your plumbing skills to reach the more difficult depths.

1. MOUNTAINEERS
2 GELATINOUSLY
3 AMBIDEXTROUS
4 CAULIFLOWERS
5 VARICOLOURED
6 SACRELIGIOUS
7 FOUNTAINHEAD
8 OSTENTATIOUS



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Tel: 021-356 3388
Price: TBA

Delphine is a French software development company that caused a sensation a few years ago with a game called *Another World*. This game received conversions to all manner of machines from Mega Drives to Apple Macs and was a chart topper for as long as I can remember.

What made it so special was the clever and innovative way the game combined action with strategy and puzzle-solving. It seemed a game like this would be never equalled, but several months later it was greatly surpassed.

Flashback was born and

FLASHBACK

established itself as the ultimate adventure for a single player.

The character control and enemy movement have been achieved using a rotoscoping animation process, not too far removed from the Disney system utilised in their recent classic *Beauty and the Beast*.

The end result is a fluid-moving character that can animate through a combination of control inputs in a very realistic way.

As you achieve certain goals, some well-placed animations take you through the tasks ahead or summarise what you have just achieved.

Conrad is the lead character that you play and his scientific tinkering has lead him to make a startling discovery with his molecular density analyser, revealing that all is not what it seems on Earth.

Certain key figures have been replaced by morphing aliens who are hell-bent on taking over the planet, if not the entire galaxy, and turning all into slaves of their means.

Refining his creation into a set of glasses, he sets forward to uncover and destroy the alien existence. Your journey as Conrad will take you to planets afar, alien space ships and eventually back to earth where you can fulfil your destiny.

The backdrops and attention to detail compares to something out of a comic book – carefully drawn and totally interactive.

Each level provides a different challenge be it shooting skills, climbing skills or races against the clock utilising both.

On the first level you must find a holocube to discover your task, locate credits, keys and shield recharge points to finally obtain an anti-gravity belt to float to the underground inhabited area. Later levels involve gaining employment to save up enough credits to play the Death Tower game, a sort of Running Man experience that sees you shooting it out with enemy players for the grand prize of a ticket back to Earth.

The ultimate aim is to blow up the alien computer and escape to win the day. To make things that little bit harder, there are three levels of difficulty which reduce or increase alien speed and accuracy and simplify the tasks for the respective level.

A special mention should be made to the aliens you will encounter. Be they jump-suit-clad marksman or morphing blue lizards these must be some of the best adversaries I have ever met.

Conrad himself is no push over, as you have the ability to manipulate him in several ways. You can make him crouch, roll, jump and, in extreme cases, leap and hang on by his finger-tips to eventually pull himself up.

A gun can be pulled and fired from all positions and a shield can be used to defend the character and his three 'kill' points.

All through the action a very moody and atmospheric sound track plays its heart out, providing some creepy moments in all the right places.

Used very much like a film score, the music is tagged to the action and heightens and lowers as certain situations arise. What it all boils down to is the nearest you'll get to an interactive cartoon.

Flashback is fantastic. It's a game that every serious gamer and not so serious gamer should acquire.

Steve Atherton





THE ONLY ONE GOOD ENOUGH TO BE CALLED

PREMIER MANAGER

Supplier: Gremlin Graphics
Tel: (0742) 153423
Price: £25.99

Here's a blast from the past, a 'football management game'. When I was young I had a Spectrum 48K then a Commodore 64. I was dead proud of these machines and enjoyed hours and hours of meaningful word processing, mathematical calculations and constant help with my 'O' level course work.

At least that's what my parents thought. Being sold by the Telegraph adverts for these machines, my parents were convinced I was entering a world of the future and as a result I would enjoy boosted IQ and a greater knowledge of formulae and quantum physics.

Of course I was enjoying all this but cleverly disguised as *Gauntlet*, *Asteroids* and even the odd *Pools Predictor*.

One such format that sticks out from those days was the football managerial games. Hours and hours could be spent taking your personal obscure team through all manner of cups and challenges, the end result being relegation or world domination.

They were highly popular and fortunately survived the 16-bit explosion and now look set to shine in the 32-bit market.

Premier Manager looks to me to be a direct port from the Amiga version, so what you are effectively getting here is a 16-bit game for your money.

Not that this should put you off in any shape or form, as this version has received awards from nearly all the Amiga press.

This is more than just a graphical treat with a few smart touches. You take your backward and no doubt Vauxhall Conference material and transform them into Premier, European and even World champions by training players, entering the transfer market, phoning up and faxing the key members of the club, and even deciding on team formation and substitution.

Of course a manager's role does not end there as the press must be dealt with, you must make ground improvements and obtain sponsorship and advertising revenue.

OK, I hear you say, that's not quite a manager's job but it is here and that is that. Either take on some responsibility or stay out of the disk drive my boy.

Up to four players can play at once, all out for the accolades, with some humorous and perhaps not so humorous moments lying in simultaneous transfer market bids – a quick way to show just how devious players may be.

Each player takes turns in making the adjustments, until all are satisfied and the big match (matches) can begin. Results are brought in on a result system not too far removed from the Grandstand 'computer' and here you see how rivals did.

Of course, just choosing the players and letting it all happen would be a tad boring, so highlights of the game as it transpires are transmitted to a little monitor on your desktop.

This is essential information if you are to make effective changes at the half-time point. Should the changes be a waste of time and new blood is needed, you can consult you scouts who will advise on the best potential to sign up, (very cheaply of course).

You must then train and nurture carefully for some rewarding results, both on the field and in the transfer market. Scouts can also be used for sizing up the opposition for the next match.

It's a great game, football that is, and this offering from Gremlin is certainly the most involved version I have played, with some research having obviously gone into the product.

There are five divisions, complete interaction with other managers that might want to play and all grounds upto a certain standard must oblige with the Taylor report.

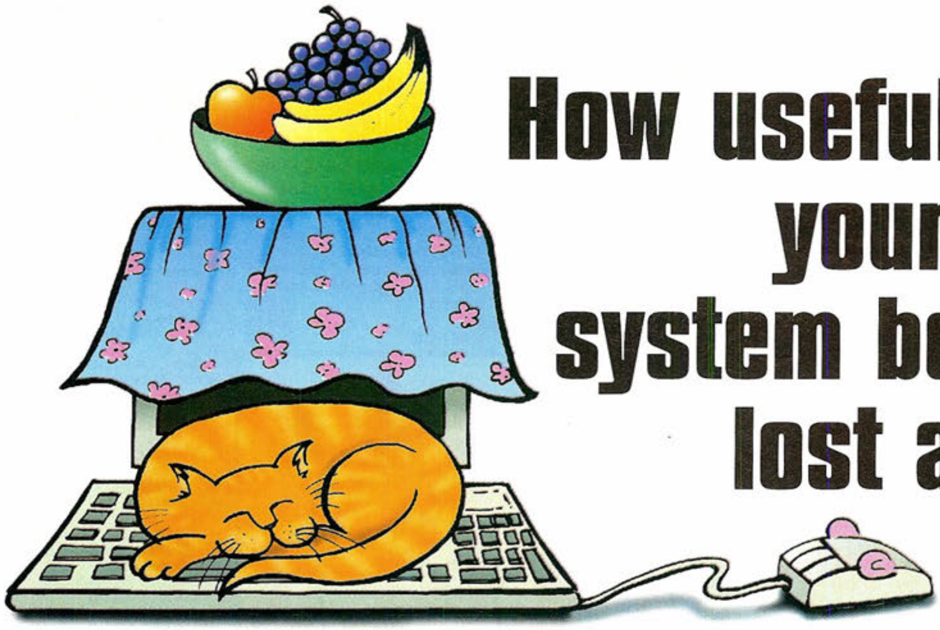
All the changes you make have direct relevance to your game, and if anything, this program might make you more respectful of the TV heroes you might want to support.

I liked this game though it didn't completely bowl me over, maybe I'm not one for full-blown simulations. It took more than several attempts before I started winning even the most basic of challenges and I admit this cheesed me off a bit.

Perhaps the instructions should have been a bit more involved, with a tutorial taking you through the basic decision-making consequences.

Steve Atherton





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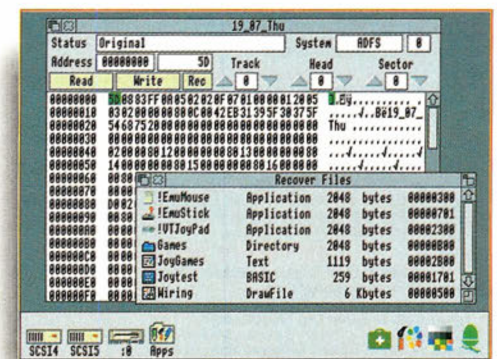
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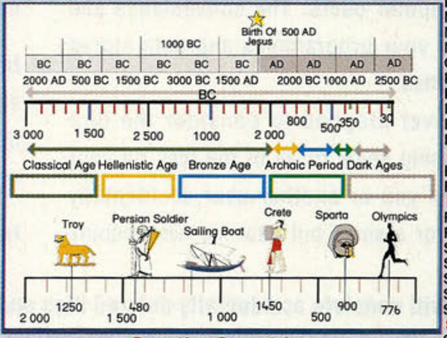
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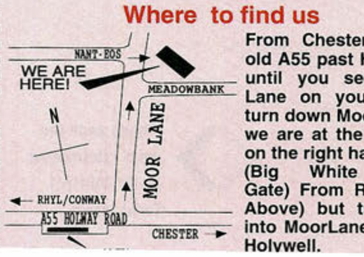


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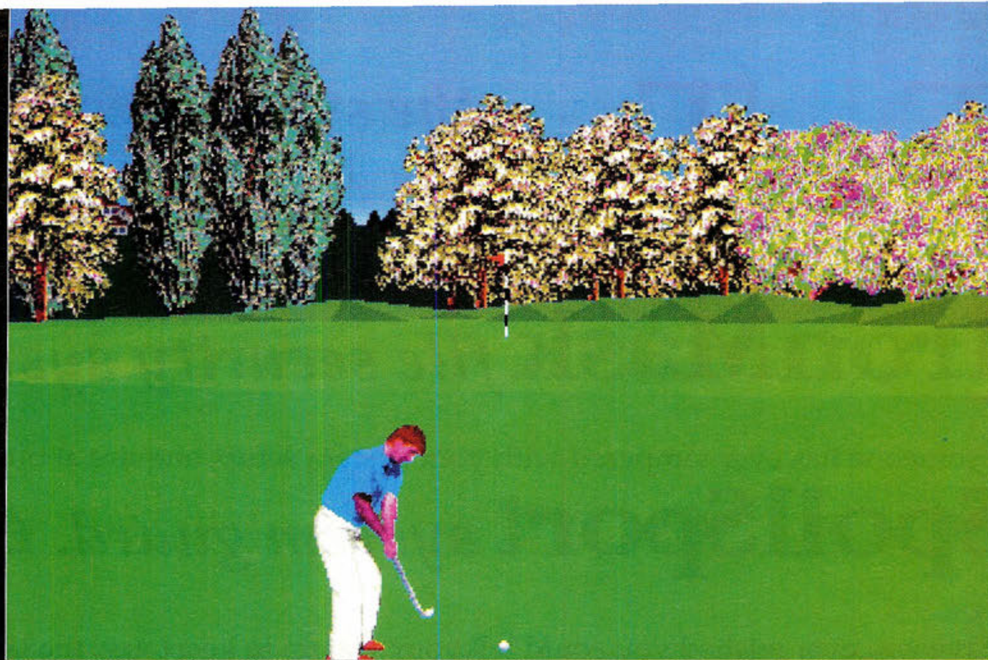
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IF THE TITLE YOU REQUIRE IS NOT LISTED, PLEASE GIVE US A CALL

VIRTUAL GOLF

Augusta Course Disc

Supplier: Fourth Dimension
Tel: (0742) 700661
Price: £16.95 + VAT



This is the first of the many course discs that the instruction manual promised you when you got tired of Wentworth, the original 'default' course.

Perhaps the best golfing simulation on the Acorn to date, the author Gordon Key has managed to produce a version of 18 holes that relies on a physical swing system.

What I mean here is that nearly all other games use a timing method to hit the ball.

You simply press Fire to bring the club back, press again to stop swinging and obtain suitable power, then press once more to make contact with the ball. Easy. Er.... yes.

With Gordon's method you pull back and hit by swinging the mouse across your mouse mat. This is not only more realistic, but also gives the player a feel for the ball and allows greater skill judgement in obtaining distance.

The rest of the game parameters should need no introduction with up to four players competing at once, Strokeplay, Matchplay, Six Tournaments, replays for how you got out of sticky moments and numerous other options and facilities.

One extra that I am especially keen on is the left-handed option which means you can of course play as a Witch. (That's what my Grandma told me about these people and she's never wrong.)

With all these options and facilities does the new disc offer anything extra? Well, the obvious answer is yes with some improved scenery to negotiate and some very interesting 'improved' ball characteristics.

America has many things, some defy logic and reason, but Fourth Dimension assures me that Augusta, in particular, has a different atmospheric value.

Right. To elaborate, a ball hit in Wentworth will behave differently to a ball struck in Augusta. This sort of attention to detail is reflected in both bunker positions and, to a certain degree, pin positions and green composition.

In short, save yourself £400 airfare and get this disc. Essential for all Virtual golfing fans everywhere.

STUNT RACER

Extra Tracks Disc

Supplier: Fourth Dimension
Tel: (0742) 700661
Price: £19.95 + VAT

With hot hatches and coupes put clear out of reach to the under 75s without a 50 year minimum no claims, this game has to be the best and only way you can enjoy some full contact on the road, or should I say track.

Stunt Racer has established itself as the best racing game to date, with the aim of the game being to qualify and out race the competition.

The competition does not in this case have to be the computer, as a link-up facility has been included to allow two player head to head.

And believe me if there's one way of making friends – and enemies – quickly, it's by playing game of *Stunt Racer*.



This is a serious enemy-making game and things do not stop with just endless circuits of an Indy course, oh no. *Stunt Racer* takes the concept of motor racing and warps it beyond your wildest imagination.

You see, the programmers have seen fit to include some really nasty tracks with loops, hump backs and killer Dukes of Hazard jumps.

Racing has never been so much fun, until now. If you thought you had the game licked with all the short cuts and speeds worked out, panic. Your whole world is about to change.

Here comes an extra courses disc to melt your tyres and put the shock back into shock absorbers.

The courses provide a greater challenge, with more extreme cambers, tighter corners and some far-reaching jumps that require a positive control of both steering and RPM.

Still using the original *Stunt Racer* engine means that the controls will be familiar and all the set up and tuning facilities allow for some saved set-ups to progress into this new territory.

All the camera angles and replay facilities allow some studying of what's ahead, though to be honest I have a sneaking suspicion that the course designer for this new disc must have been a tad warped.

I mean, you wouldn't want to burn him off at the lights in a Ford Fiesta if you get my meaning. His concept of a race track is a little odd.

The new courses will provide some great new challenges for all and put some new life into the art of driving your machine.

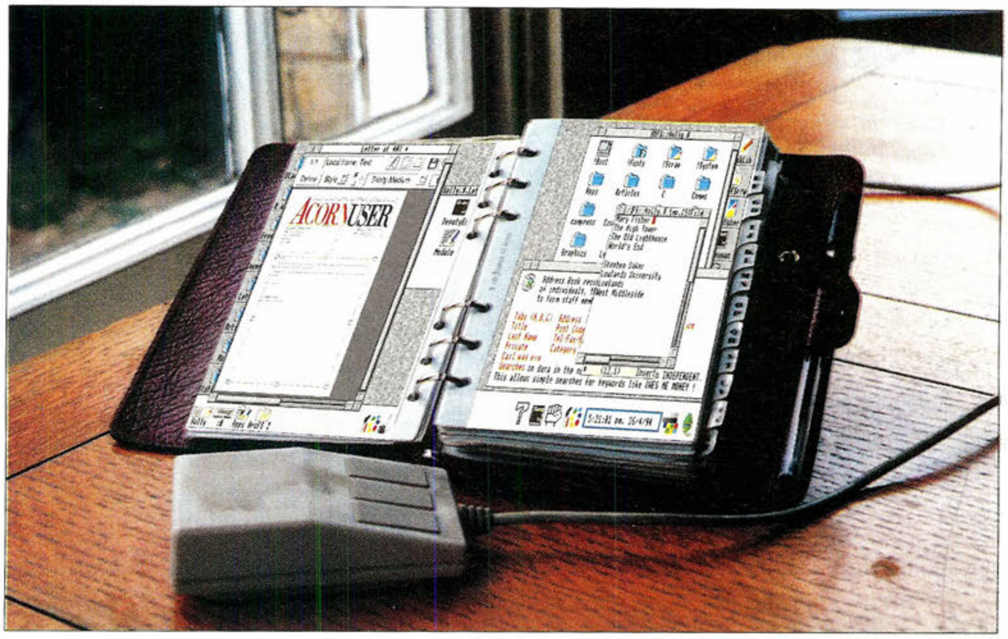
Available separately, this disc is great value and for those of you who have not played or obtained your full copy of *Stunt Racer* get moving, you might just be missing a classic.

Steve Atherton

Computer yuppiedom

Become a young middle-class professional and organise your life. David Matthewman shows you how

Almanac is a much-hyped program. 'This product is what you bought your computer for...' trumpets the cover, and quotes a review which gives *Almanac* five out of five for performance, value, and features. Don't believe the hype. Many people will find *Almanac* very useful, but it isn't perfect.



Turn your computer into a personal organiser with *Almanac*

Integrated software

Almanac is an 'Integrated Software Package', which means that it's one program which does the work of many. It has a diary – split into daily, weekly, monthly and yearly sections – an address book and an accounts organiser.

The address book is perhaps the best of these. It offers all that I could want from an address book program. Cleverly, it is organised into two or more sections, by default labelled 'companies' and 'addresses'.

An entry in one can be linked to an entry in the other, so a company can acquire 'staff' which can instantly be listed by clicking on an icon. This has many uses besides the obvious one, because 'staff' can be interpreted to mean 'children of', 'students of' or 'tenants'.

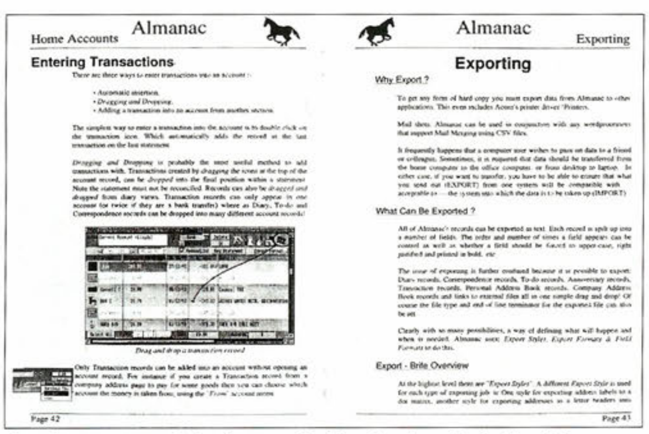
The accounts section serves well, and a reasonably-sized business could benefit from using it. I found it fiddly to set up and enter transactions at first, but given practice they can be entered fairly quickly.

It is not a substitute for a full-blown accounts package – for example it will not do budgeting – but it is fine for keeping track of transactions.

The diary section is useful and fine as a planner, but the lack of an alarm function is a serious omission.

I can set up a 'to do' record with top priority for a certain time on a certain day, and *Almanac* will dutifully let me forget it with no warning at all.

Also, even on my 35MHz Arm3 machine, the date selector is slow.It is usually quicker to type in a date as dd/mm/yy, which is irritating on a desktop as responsive as the Arcs.



The *Almanac* manual: inadequate, badly printed and full of spelling mistakes

However, to look at the individual sections would be doing *Almanac* a severe injustice. It is billed as a package for information management, it is a 'personal organiser' and a good one too.

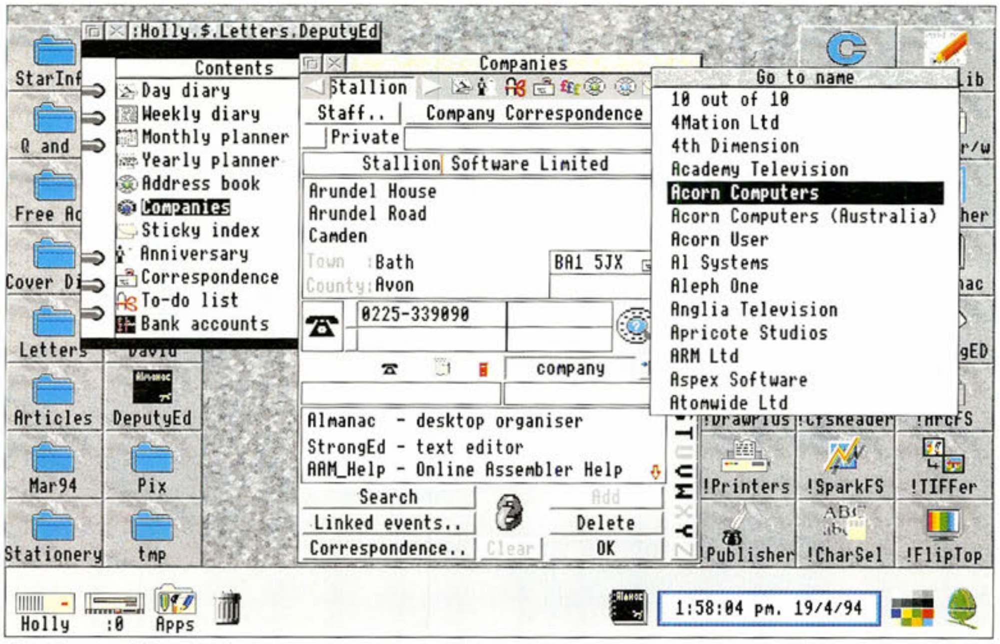
Linked records

The key to this is relational linking – the ability to link records together so that clicking on a specific link icon on one record will bring up a window on another. This makes it meaningful to have several other sections which would be of little use on their own.

Take the correspondence section; on its own, the records in it simply note that letters, faxes and so on have been received and sent. However, by linking a correspondence record with an address record, I can access details about the person who sent or received the letter.

From the address book record I can access any other correspondence which I have linked with this person. Moreover, I can link the correspondence record with the file containing the letter, and *Almanac* will load the file in at the click of a mouse, loading the relevant word processor if necessary.

Relational linking is a powerful tool, which I gradually appreciated more and more as further uses occurred to me. *Almanac* has a 'sticky pad' record type onto which practi-



The *Almanac* address book

cally anything – other records, files, directories – can be dropped.

It is easy to get carried away with this particular feature and create a plethora of sticky pads with groupings like '*Draw* files of European woodpeckers with pied tail feathers,' but kept under control this is as good a way as any to organise your filing.

Remember though that *Almanac* takes up 700K of memory even before a file is loaded, so it is more memory-hungry than the average pinboard application. It needs 2Mb to run comfortably by itself, and 4Mb to run alongside *Impression*.

Filtering is another powerful feature of *Almanac*. Every record can be given a category and filters can be set up so that only records with a certain category are viewed.

More powerful filters are possible. For example I can filter out all correspondence to which I have replied, or filter in all afternoon diary entries.

Even so, this is no database. The filters are primitive and prescriptive and there is no easy way to select only *evening* meetings, nor is it possible to set up filters for addresses.

Data from *Almanac* can be imported and exported in several file formats. As with filtering there are a number of options, which include the ability to save text with *Impression* styles which is useful for printing.

While these options are powerful there is no way to mix formats when importing data, which makes importing addresses awkward.

Ease of use

With a program as complex as *Almanac* it is important that it is both intuitive to use and that it has simple clear instructions. Unfortunately, I feel that *Almanac* falls down on both counts.

The program implements filer style drag-and-drop. Record icons can be dragged between and within windows to copy them, or dragged with Shift held down to move and reorder them.

The problem is that this doesn't always work. I cannot copy a diary record by dragging it within a monthly planner window as I can within a weekly planner window. Instead, I have to open a second window on the same month and drag to that.

It isn't consistent, either. Drag reorders entries in the export window, but Shift-drag is needed to reorder them in the statement window.

Also, when I import addresses into the address book from another program, I frequently find the post code and phone number in the wrong field.

I can copy them to the correct one using drag-and-drop, which is a very handy feature, but I am forced to manually delete them from the wrong one. Moving data using Shift-drag doesn't work with text fields, which is not only annoying but wastes a lot of time.

The user interface is tacky. Many of the icons – especially the categories – have ugly sprites whose meaning is not obvious. Most of them are created in two and four colour modes to save memory, but this severely limits their design, making them appear chunky and roughly drawn.

Although the program only works in Risc OS 3, it does not conform to the Risc OS 3 style guide. The mouse pointer does not always change shape when over a pop-up menu icon, and there are a lot of these so it matters.

The 'title window' is in fact two windows, the outer one of which does not respond to menu clicks – confusing if I am trying to save my work.

These are niggles, but there are so many of them that they make the program frustrating to use. *Almanac* doesn't have the Risc OS 'look and feel' necessary to make it easy to use so I found myself constantly referring to the manual.

There is a flashy and fairly informative manual for *Almanac*, which comes in a real *Almanac*-branded Filofax. This isn't the one that I got with version three of the program either as a reviewer or as a member of the public, because you have to pay £23.50 extra to get it.

The standard manual for version three is awful: badly printed, badly written and far too sketchy to be of any real use. The examples just about tell you what *Almanac* can do, but give nothing away regarding how to do it.

Much better is the online, context-sensitive help available using the excellent *StrongHlp* program which comes with *Almanac*. This is at least in danger of telling you something useful, although it has far too little to say on some features and contains at least one error.

Summary

Once I had mastered *Almanac* I found it a useful tool which saved me time and kept my correspondence and accounts in order. For that reason I would recommend it to anyone who feels that they would find such a program useful.

However, I have serious reservations about the ease of use of the program. It takes a long time to learn and people who are not fully computer literate will find it confusing.

The version I have reviewed is version 3.06, which by and large works. The version that I bought at last year's Acorn World Show – before I became a reviewer – was version 3.00, which is a bug-ridden program which Stallion Software should be ashamed of having put on sale.

Despite registering immediately, I have never received an update, or indeed heard a peep out of Stallion. So much for customer support. I can only hope that other registered users were better treated.

Product details

Product: Almanac
Supplier: Stallion Software
Tel: (0225) 339090
Price: £85 inc VAT
(optional filofax £23.50 inc VAT) upgrade from version 1 £17.62



WIN the latest Acorn Risc PC

1994 ClipArt Competition







Computer Concepts and Archimedes World are proud to jointly announce the launch of *the* 1994 clip-art competition - a competition open to anyone wishing to enter, submitting artwork (not sprites) produced in any graphics/drawing program available for Acorn RISC computers. The fantastic first prize is a new Acorn Risc PC, and there is a special Best ArtWorks Entry prize (a Pioneer CD ROM drive) and a string of runners-up prizes. So hurry and get those creative fingers moving ... you have until 31st July 1994.

Full details and an entry form are available from Computer Concepts.



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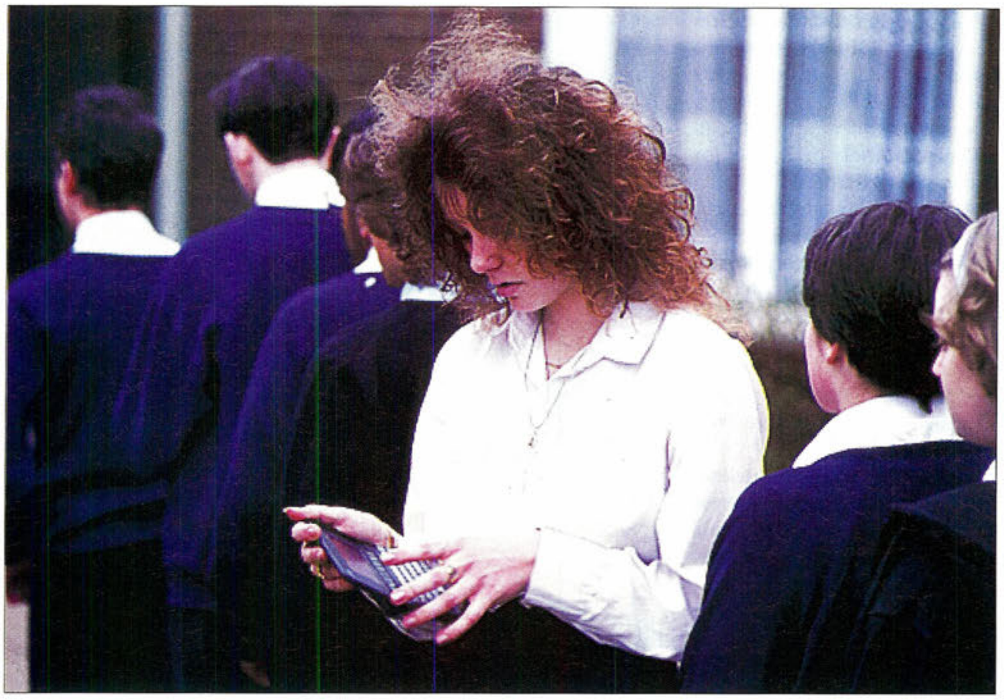
OPEN TO ALL DRAWING PROGRAMS ON ACORN RISC COMPUTERS

Commentators on the use of information technology in education have frequently predicted that the computer revolution is about to hit schools, but it hasn't happened yet. However, portable computers could be the catalyst and the National Council for Educational Technology clearly believes this is the case.

NCET has recently completed a £2.55 million research project into the use of portable computers in education.

Around 250 English and Welsh institutions were involved, using a variety of equipment – over 5,500 computers and 1,800 additional items of hardware and software – from a range of manufacturers, including, of course, Acorn.

Given that most of the machines were utilised as shared, rather than personal resources, tens of thousands of students, teachers and parents participated in the project.



Book it!

Alice Smith explains how the humble Pocket Book is becoming an integral part of the modern classroom

But why was NCET, and the Department for Education which actually funded the research, so ready to invest on such a grand scale in research into portable computing?

In a guide to choosing and using portable computers published just over a year ago, it stated: 'It is only a matter of time before every learner and teacher who wants a portable computer will have one.

'Five years ago few would have predicted that a 1:1 ratio would be achieved this century, but now most would agree that (at least for the majority of pupils) the day of the personal microcomputer will arrive during the 1990s.'

Stuart France, who managed the project for NCET, explains that the aim of the research was not so much to ask whether portable computers are appropriate for schools, but rather to find out in detail how access to appropriate machines, made available in the right place at the right time, can support, enhance and extend learning.

A formal evaluation of the scheme by the National Foundation for Educational Research will be published later this summer, but informal evidence from a cross-section of individual projects suggests that portables are indeed being used successfully to promote learning at all levels, right across the curriculum and for administration, too.

Primary protables

In terms of the work that has actually been done, one primary school has been sending a teddy bear and a portable wordprocessor home with nursery-aged children.

Parents collaborate with their offspring to produce the teddy bear's daily diary, which is printed out back at school and pasted into a scrapbook.

This is a literary experience but it also promotes keyboard skills and gives pupils an early familiarity with computers.

In secondary schools students have the opportunity to borrow machines from the learning resources centre, formerly the library, to use for extra-curricular activities.

Pupils on the Youth Crime Prevention Panel keep their membership and attendance records on a portable and have used it to produce an action plan, an anti-bullying leaflet and a high-quality magazine.

Other secondary schools have targeted specific curriculum areas, such as science or the humanities, and pushed portables out into these departments, almost always with the result that other staff have demanded their subjects be included in the pilot, too.

A middle school made portables linked to Concept Keyboards the vehicle for introducing French and there have also been projects which have tackled administrative chores, such as producing records of achievement for a whole year group via a set of hand-helds which was passed from class to class.

Special needs students are also benefiting from the use of portables. For pupils with physical disabilities, the real advantage of a portable is that it can be placed on a small surface, for instance a tray attached to a wheelchair, and positioned so it is easy to use.

A hospital school has also utilised miniature machines for students who are recuperating but confined to bed.

Not all these projects have used Acorn equipment but the basic principles can be adopted to any hardware platform, as the factor which gives portability its impact is access – more portables means, quite simply, more computers available to students.

This is partly because distribution patterns for portables tend to diverge from the classic model for desktops

where, particularly in secondary schools, they are concentrated in a computer room. Portables, in contrast, may be held centrally but can be booked singly or as a set for use in any classroom.

Hence, in any given teaching and learning situation there is more likely to be a portable to hand and some of the schools involved in the NCET research have logged far higher percentages for portable than desktop computer usage – an impressive 80% in one case.

Improved access also seems to generate a very strong sense of personal ownership, again crucial to promoting enthusiastic usage and learning.



The *A4:* not as popular as the *Pocket Book*

Pocket Book

One of the surprising things which has come out of the research is the extremely positive response to palmtop computers such as the Pocket Book.

It would have been a fair assumption that teachers and pupils would prefer the A4. It is obviously far more powerful than the humble Pocket Book and there is an infinitely wider range of software available for it, but that view has been confounded by feedback from NCET.

Describing the Pocket Book's positive profile, Stuart France, the NCET manager in charge of the scheme, has said that, 'Amongst the palmtops, the best of breed seems to be the Acorn Pocket Book – very reliable, now very popular and easy to link with an Archimedes.

'As one teacher commented, with hindsight: "After being persuaded by NCET to use Pocket Books for the project, I had decided these Pocket Books were no use at all. How wrong I was! We have now bought more".'

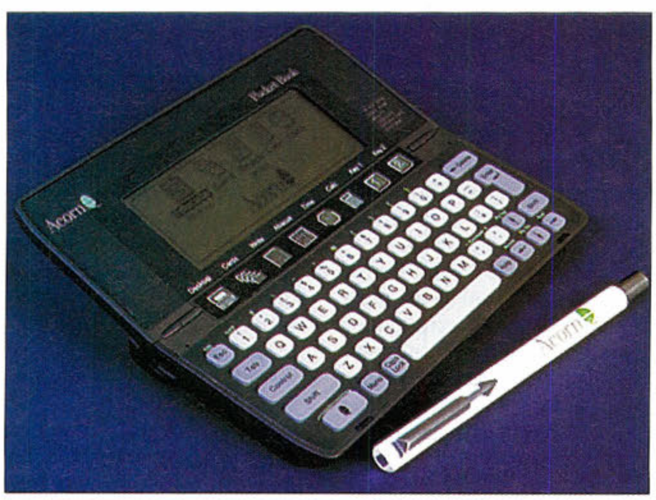
The key to the take-up of the Pocket Book is its genuine portability. It can be used literally anywhere, in any department, at home and even outside.

Pocket Books are also, of course, cheaper. Given a limited budget, an IT co-ordinator can get more Pocket Books for his or her money than A4s. This means there are simply more machines to go round and many are opting for volume over power.

The Pocket Book comes with a built-in wordprocessor, spellchecker, database, spreadsheet and calculator. *Schedule*, a diary program, and *Plotter*, a graphing application, are now available, plus the machine will run packages for the Psion Series 3 palmtop.

However, the software base is still limited and, it has to be said, relatively unsophisticated, but that gives the Pocket Book its unique selling point.

Simple, straightforward applications which, like the machine itself, are easy to pick up, enable a greater number of pupils to achieve a basic literacy in IT, so IT skills generally become more widespread.



Acorn's Pocket Book is cheap, portable and very flexible

Pupil confidnece

This in turn creates confidence and some students are consequently encouraged to develop their abilities further on more powerful desktop machines.

This applies to the educators, too. Many of the staff involved in the NCET research project commented that portables have been the key to converting their colleagues to computers.

One secondary IT co-ordinator memorably confided that, until the advent of portables, it had been, quite frankly, an uphill struggle getting other teachers interested in IT.

Now he has difficulty coping with demand for the machines because staff in all subject areas have realised that portables can be an extremely valuable productivity tool for them too. There has been an increase in enthusiasm from parents as well. Many of the schools involved in the NCET scheme made arrangements for pupils to take the machines home with them on a regular basis, generating a parallel family interest in IT.

Parents have attended training sessions so that they can help their children with the technology and there have been cases of siblings squabbling over access to the machines.

In Japan, seasonal sales of portables already outstrip those of conventional desktop systems and the market for portables is undoubtedly opening up for business users in this country, particularly as capabilities for integration with other forms of technology – for example networks and cellular telephones – improve. The education community, it seems, is set to follow suit.

People like portables. After all, they are cute, so cuddly that some pupils take them to bed to use by torchlight, and they could, just could mind you, finally bring about that fabled IT revolution in schools.

To register for a copy of the NCET report on portable computing in schools, contact the organisation's information officer on (0203) 416994.

Where are you with maps?

The KEY map system supplies:

- Cross-curriculum materials
- Maps from Bartholomew
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- Counties of the British Isles (CD-ROM)
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- Map suites of various countries
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- Operation on Acorn and Windows™ platforms
- Countries of the World (CD-ROM)
- Accuracy, clarity and speed
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- Facilities to create map data

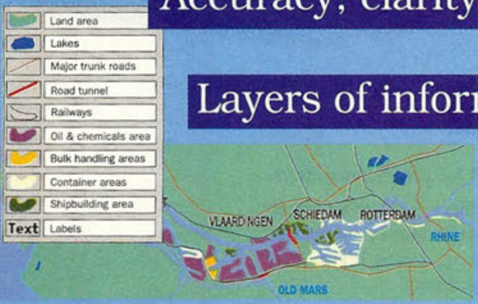












The KEY range of databases, spreadsheets and linked programs provides the range of facilities you would expect, such as searching, sorting and graphing. It also includes a powerful mapping system which is continually growing to meet the demands of the curriculum.

Many map suites are available on diskette, and they have been joined by two CD-ROMs, which use data supplied by mapmakers Bartholomew. Data in any KEY PLUS, KEYNOTE or KEY CALC file can be plotted to the maps - down to ten metres anywhere on the earth's surface. Maps cluttered with data are a thing of the past!

KEY PLUS allows point data to be plotted to maps, icons to be plotted onto the maps, and the icons can be scaled using numeric information. In addition, line and area data can be held in KEY PLUS datafiles - for instance all the rivers of Britain can be held in a file, selected through a normal search process, and plotted to any scale of map. All maps can be exported to other programs for presentation and reports.

A photographic database can be stored with the location of the photos, holiday locations can be plotted, historic data can be related to land forms, environmental information can be stored - there is an infinite variety of uses!

New Atlasfiles from Collins-Longman are being developed as part of the system. KEY DISTRIBUTION enables you to set up your own choropleth mapping modules.

For full details of all the KEY range of products, ask for the latest KEY catalogue!

The integrated KEY system from Anglia Television Education

ANGLIA Television Limited



CD-ROM

The 1994 catalogue from Anglia includes details of the range of CD-Roms, starting at £25.00

To: SCA (Anglia Television), Dept U5, PO Box 18, Benfleet, Essex SS7 1AZ or phone/fax 0268 755811

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KEY initiatives

We have lift-off!

Colin Rouse looks at Earthwarp

Earthwarp is produced by Longman Logotron to support the BBC's schools' television programme 'Look and Read.' Aimed at the 7-9 year old age group, the Look and Read programmes are designed to stimulate an interest in reading as well as aiding language development.

The supporting computer software follows the original television story, offering a variety of activities to enhance and extend the work.

The story has Ollie as its main character. He hails from the planet Gia and is helped by his friends from Earth, Martin, Jenny and Amina. Ollie has come to Earth to search for a probe which was left a hundred years ago to monitor pollution on the planet. Unfortunately, pollution is getting so bad at Southbeach, (the programme's location), that the probe is now in imminent danger of exploding. The user must stop this happening by completing a series of tasks.

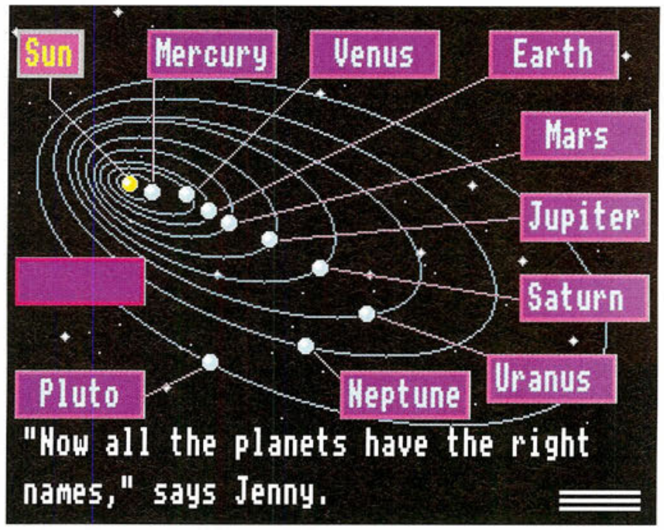
The children are working on a wordsearch puzzle when Martin asks them to go to the beach. They arrive there to find Ollie trying to use his wrist computer to locate the probe. The pollution on the beach makes it impossible for Ollie to pick up the signal from the probe, so the children have to clean up the beach by using co-ordinate points, before the probe can be located.

Ollie then has to fit his Mk II 'fidget' into the probe to turn it off. Unfortunately, this doesn't work and he needs an Mk III version which he doesn't have. He needs to contact his sister, Ellie, so that she can bring the correct fidget but he has lost the Orb that he needs to make his communicator work.

This can be found on the other side of the river which has to be crossed and the children have to follow a coloured sequence of stepping stones in order to do this. On the other side of the river is a factory which the children have to enter and search until they find the Orb, encountering problems along the way.

Once the Orb has been recovered and the spaceship located, they find that the ship is damaged and has to be repaired. Once done, the children then have to repair the communicator by joining pipes containing root words.

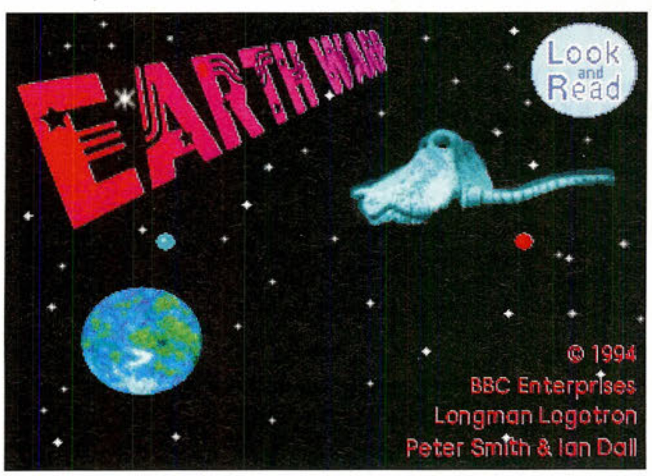
Using the communicator, Ollie is able to contact Ellie and call for help. Ellie needs to be guided across the solar system from Gia, using angles and degrees, and the planets of our solar system need to be identified so that she can recognise and land on the right one.



With the planets named, Ellie can land safely

Once she has landed, the children have to help Ellie assemble and insert the Mk III fidget so that the probe is made safe, by solving anagram puzzles in a race against time. Luckily, the disaster is averted, Ollie feels better and a report is compiled for the local newspaper.

Although Ollie has tried hard, he has made spelling mistakes in his report which have to be corrected. The program ends with the children reflecting on how earth can be better looked after, while Ollie and Ellie return to Gia in case their help is needed elsewhere.



Useful

This is a stimulating program, which is well thought out. The content level of the program is well matched to the abilities of the average 7 to 9 year old, although it could equally be used across all of Key Stage 2 at various levels.

The National Curriculum correlations are well documented in the handbook, with reference made to specific Statements of Attainment and levels.

The handbook contains a comprehensive guide to using the program in the classroom, guiding the non-specialist IT teacher and providing a useful range of extension activities for each of the program's stages.

It also provides starting points for class topics based around the program and ideas for extending this. Children using the program have found it challenging but fun to do, with a sense of achievement when they have completed it.

One option which is particularly useful is the facility which allows the children to return to the point they previously reached if they run out of time.

My only criticism with the Archimedes version of the software is that it doesn't really make use of the enhanced capabilities of this series of machine.

The mouse has only limited use and the program may have more appeal if an outline font rather than an enlarged system font were used. However, *Earthwarp* would be a useful addition to any Key Stage 2 curriculum software collection.



¡En Marcha!, a Spanish CD-Rom from Yorkshire Television

Shopping mad

Geoff Preston looks at the bargains on offer in the Computers for Schools scheme

From 18th April to 12th June, Acorn and Tesco will be running their *Computers for Schools* scheme. For each £25 spent in Tesco, parents will receive a voucher which should be sent to school.

This year, vouchers can be used to 'buy' Acorn hardware, third-party hardware, CD-Roms and books. What each school purchases will depend largely on how many vouchers they collect, but for many, a computer is going to be out of reach.

However, if you are saving for a computer, then the A3020 with multiscan monitor (Order Nº A108 – 3000 vouchers) looks about the best buy. Later, this could have a Ram upgrade to 4Mb at a cost of about £90 and will provide a powerful machine that will last for several years.

This will be particularly useful for primary schools as this computer, with its in-built hard disc, could provide the basis for a small network.

Acorn Access – the network aimed at primary schools – will get a full review in the July issue of *Acorn User*. The Tesco/Acorn scheme offers Acorn Access kits (Order Nº A120, A121, A122 – 1500 vouchers each).

The actual cost of an Acorn Access pack is £145, about the same price as many of the CDs (*Direction 2000*, for example). However the CDs are offered for only 700 or 800 vouchers.

This scheme will give many schools, especially primary, the opportunity to bring existing computers up to the latest spec.

If anyone is still using the old operating system, an upgrade to Risc OS 3 should be at the top of any shopping list. Of particular note is the 10 pack upgrade (Order Nº A110 – 1800 vouchers).



Computers for Schools voucher, but don't use this one

Seniors

Most secondary schools have had CD-Rom drives for a couple of years, but only in the last 12 months have we seen some really good discs.

Thomas Nelson has taken over Interactive Learning Productions and hence has inherited some of the best CD-Roms which are produced in conjunction with Yorkshire Television.

Direction 2000 (Order Nº T159 – 800 vouchers) was reviewed back in January and the verdict was an excellent resource which makes full use of the medium.

In the same series is *¡En Marcha!* (Order Nº A110 – 800 vouchers): a Spanish version. This too comes with a microphone for speech sampling. Both of these would cost £150.

Science discs, *Elements* (Order Nº T150 – 700 vouchers) and *Materials* (Order Nº T151 – 700 vouchers) are available and these too are excellent resources and ones which should be considered either with or without the Tesco/Acorn scheme. For Geography, *The Physical World* (Order Nº T149 – 700 vouchers) is well worth considering.

Juniors

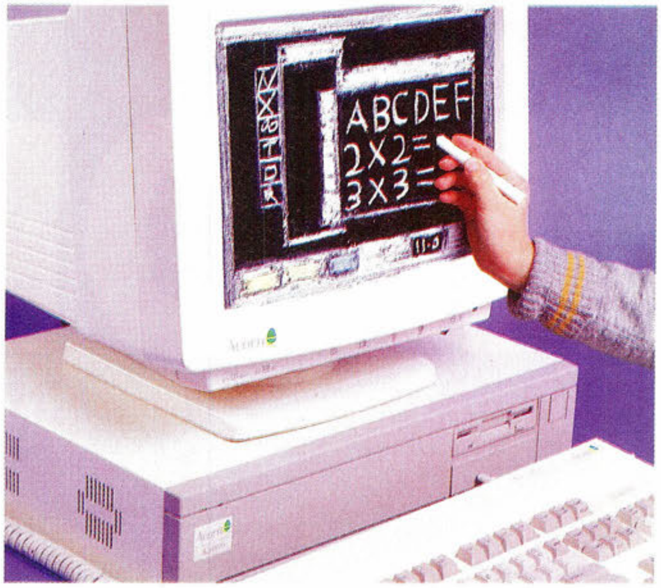
Primary schools have just been given some funding to buy CD- Rom technology and so many will be attracted to the Flying Boot Reading Scheme.

Various materials for the scheme are on offer: a six-pack kit (Order Nº B164 – 1000 vouchers) and an accompanying CD (Order Nº T161 – 500 vouchers) being the main items.

Most of the component parts of the starter pack are also available and so schools can double up on the parts thought to be most useful. These smaller items will also be handy for using up spare vouchers after the initial target has been reached.

Whenever you are offered vouchers, even if you don't have children in school, please don't refuse them. Instead, accept them and then give them in to your local primary or secondary school, or even give them to one of the neighbour's children to take in.

Every little helps, and after all, you're only doing what you would normally do – go shopping for food.



The Dearing Report

John Woollard's personal view of the implications for information technology

By the time you read this the world may well be very different. We are awaiting, with great expectations, the release of the draft revised orders for each subject.

The big question was: will IT (Information Technology) exist as an order in its own right, will it be 'tacked onto' Design and Technology simply because information technology contains the word technology or will IT manifest itself entirely within the orders for the various subjects?

Dearing is emphatic upon its suggestion that the basic knowledge, skills and understanding of IT will be identified within the Technology order (4.21).

Dearing does raise the status of IT by including it alongside literacy, oracy and numeracy as 'the basics of learning at the primary stage' (2.9).

The reassurance that the basics of IT are part of the core of the curriculum begs the question: how basic? Will IT be represented solely by the basic use of a wordprocessor, database and a picture painting package? Perhaps we may lose the diversity of IT activities that exist in the full range of subject areas of the secondary school.

Sir Ron has gone into some detail regarding the amount of time spent on each National Curriculum subject at Key Stage 1 and 2. Very specifically he has put the tag of 27 and 36 hours per year respectively.

Importantly, that time element is not in addition to the other subjects but is part of the time allocated to them.

What are the implications of the 36 hours per pupil per year requirement?

30 pupils requiring 36 hours each over a 39 week year means the computer needs to be switched on and used for over 27 hours a week, that is, five and a half hours a day!

Three major factors that help are:

1 Sometimes children work in pairs or threes on the computer.

2 Some IT work is related to discussions regarding the use of it in everyday life, ranging from pupils talking about the way equipment responds to signals or commands to discussing the environmental, ethical, moral and social issues raised by IT.

3 There are other items of classroom/school equipment that give experience of IT and meet the requirements of some of the current Statements of Attainments. For example: Roamer, teletext, laptops and programmable toys.

Paragraph 5.19 of the Dearing Report reflects the greatest uncertainty for the future of IT within the curriculum.

I am certain that English, mathematics and science must remain in the core curriculum for all students to age 16. The position of IT is less clear.

There are those who argue that it should be taught as part of the statutory core. Others, however, think that pupils should have received sufficient instruction in basic IT skills by the end of Key Stage 2.

I recommend that the subject groups generally, and the technology group in particular, advise the School Curriculum and Assessment Authority (SCAA) on this issue.

Parents may be asking whether IT will be mandatory to a level sufficient to meet the future needs of their children.

On the other hand, will IT be compulsory so that they have no option but to choose a curriculum with more music, modern foreign language or art opportunity and a lower input of information technology?

Governors may be wondering how they will meet the resource requirements of delivering IT, especially within subject areas where there may be a greater need for some clusters of computers.

Teachers may be asking how much assessment of the IT skills of pupils within their class will they need to make. To what level of detail will their record-keeping need to be? Will they have to report to parents the performance of their pupils in IT?

What are the implications of starting a new range of GCSEs in September 1996? (8.12) How will the development of GNVQs effect developments in the teaching and use of IT within the school?

And I nearly forgot...what could the pupils be asking?

- Will we be able to use computers to help us understand our work?
- Will we be able to use computers to help us present our work?
- Will we learn to use computers to help us when we leave school?

Let us hope that the result of the current round of changes will allay the fears, meet the needs and fulfil the aspirations of all concerned.

The Dearing Report

The National Curriculum and its Assessment was a report created after a series of consultation meetings between teachers and the School Curriculum and Assessment Authority (SCAA).

The report, chaired by Sir Ron Dearing, was published in December 1993 and contains recommendations regarding changes to the National Curriculum and its assessment.

The report is divided into nine sections and each paragraph is individually numbered. For convenience those numbers are included in the article.

NEXT MONTH IN ACORN USER

Networking

Acorn computers have always been ideal for hooking together, but one subject which is guaranteed to cause confusion, is networking. In our Network Special, we'll explain exactly what all the different types of network are, and which ones are suitable for your needs. We'll also be looking at the best software available for network managers, how to ensure your setup runs as quickly and smoothly as possible, and what extra hardware you'll need on top of the cabling to make the most of networking. If you want to get to grips with one of the most important areas in the Acorn world, don't miss next month's issue

PLUS

Photo retouching

With the advent of the exceptional graphics capabilities of the Risc PC, a large number of photo retouching packages have been released. We exclusively test out all the newcomers, and decide which are *PhotoShop* contenders, and which are not.

Internet

Millions of people use the Internet every day to communicate with each other, and millions of people wish they could but can't understand the jargon. Don't worry: we'll explain how to get into electronic mail without getting involved in modem speeds and handshaking protocols.

To be sure of your copy, please fill in the coupon below and hand it to your newsagent. Or why not take out a subscription, which includes a gift pack. See the Subscriber's Page for details

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Evolution or revo

The Date: 15 April 1994. The Venue: The Cumberland Hotel, Hyde Park, London. The Event: The launch of the Risc PC from Acorn.

Many will call the Risc PC Acorn's finest computer ever. Innovative and radical, it is arguably superior to all other currently available computers in terms of features, performance, expandability and upgradability.

But then each new generation of Acorn computers has set new standards. In 1981, the BBC micro was the first to offer 80-column text with high-resolution colour graphics, a superbly fast Basic interpreter with a built-in assembler, and all this on top of a massive potential for expansion.

Six years later, Acorn became the first computer manufacturer to launch a Risc processor – based PC. The Archimedes 300 and 400 systems, with their Arm2 processors, were hailed as the fastest microcomputers in the world. Many of you may have missed seeing Acorn's full page advert in The Times on the 15th March this year, congratulating Apple on the launch of the PowerMac – Apple's first Risc computer. Better late than never?

One month to the day after this advert appeared, Acorn introduced to an expectant audience at the Cumberland Hotel its second generation Risc computer – the Risc PC.



The team behind the Risc PC

The Medusa project

The development of the Risc PC began early in May 1992, although the concept had been floating around Acorn for several months prior to this.

A core team of 20 people was assigned to work full-time on the Medusa project, as it was known internally, and over its lifespan about 20 other people were indirectly involved.

Unlike previous projects, such as the BBC micro and Archimedes, the entire Risc PC team was brought together geographically in an open-plan floor at Acorn's headquarters in Cambridge.

An independent consultant trained the team at the start of the project in a management technique known as concurrent engineering. This technique entailed all members of the development team, from sales and marketing to engineering, working together to ensure that the Risc PC was manufactured within the specified time and budget.

Acorn's goal was to produce a single computer motherboard that it could use to create an entire range of computers. The Risc PC can support a potential 15,000 different hardware configurations.

Even before any work had been done on the system, almost complete technical specifications for the Risc PC had been written.

Acorn also knew exactly how much it wanted each system to cost, and thus what it would sell for. Every potential component in the Risc PC was weighed in terms of meeting this cost target.

The result of this was that certain features that were written into the original specifications of the Risc PC, such as 16-bit sound and built-in SCSI compatibility, were left out of the final product. Volume controls on the front of the case were even considered at one stage!

When the team had to decide how many SIMM memory sockets to put on the motherboard, they debated whether to follow the example of many PC systems and have several sockets that could only take SIMMs of the same capacity, or use only a few sockets, and allow them to take any combination of SIMMs.

They decided on two sockets, resulting in the size and cost of the motherboard being drastically reduced.

The team also wanted to create a computer that was as easy to use as possible, especially in terms of expandability and upgradability. The innovative case design, which allows it to be opened in a matter of seconds, is not only good for you and me, but it's also good for the factory production line. It takes half the time to build a Risc PC as it does to build an A5000.

When the project began, Acorn had a long shopping list of technology that could be used in the system. One of the questions the team faced was whether to use the 'latest and greatest' chips which could do 'everything', but hadn't been exhaustively tried and tested, or stick with well-known existing chips.

In one case during the project they went though three successive issues of a potentially fantastic new chip, before finally dropping it in favour of a slightly less powerful but more reliable alternative.

At this stage the team also faced an interesting dilemma concerning two very important components, the VIDC20 and IOMD. Neither of them physically existed, and as they were both new chips, it was not even possible to simulate them.

In September 1992, the first VIDC20 was inserted into a prototype Risc PC motherboard. A command was entered to draw a red square on the screen, and lo and behold, up popped a blue square. Usefully, the opposite also applied, and



F.GREGORY

lution ?

the engineers soon discovered 2 pins incorrectly wired.

Late in the evening of the 8th June 1993 the final piece of the Risc PC jigsaw puzzle was put into place. The very first batch of IOMDs arrived at Acorn, and the engineers immediately set to work soldering the massive 208 – pin chip onto the board.

One and a half hours later the full Risc PC was working, almost. Staff involved in the project do admit that it was a night to remember, and that there were one or two celebrations.

The Exemplar developers

As part of the concurrent engineering approach, information about the Medusa project was released nearly a year and a half ago to a dozen independant hardware and software developers.

These 'Exemplar' companies, together with other registered developers who were supplied with details later in the project's life, played an extremely important role in the development of the Risc PC.

Until shortly before the official launch however, no developer knew what the computer was actually going to look like and be called, when it would be launched, and how much it would sell for.

A total of 45 Medusa systems, badged as A5000's, were supplied to selected developers under extremely strict non-disclosure agreements.

I know of one company, and I'm sure that others did the same, that threatened dismissal to any employee who disclosed information about the Medusa A5000 to anyone who had not signed an NDA.

The systems were used by the companies for ensuring that their existing products worked correctly with the new technology, and for developing new products.

In the first of a new series which investigates what really happens inside the ivory tower at Acorn, James Harrison looks at how the Risc PC went from the technical drawing board to completion, and how the project is different

Acorn also provided a fully-equipped room at its headquarters for many other third parties to try out their various packages.

Because of all this, software and hardware products have been available for the Risc PC from the day it was launched, and Acorn has, more importantly, been able to honestly claim that 90% of all existing Archimedes titles will work on the Risc PC.

This is a very impressive achievement when one considers that there is more compatibility between the Risc PC and an Archimedes running Risc OS 3.1 than there was between an Archimedes running Risc OS 3.1 and one running Risc OS 2.

The Future

Where is the computer as we know it going? The evolution of colour capability from monochrome to 8, 256 and now 16 million colours has been, in a sense, predictable, and the same can be said of the massive increase in memory and hard drive capacities and requirements.

It is probably realistic to assume that we will never need more than 32-bit colour and a couple of Gbs of memory, which is well within the capabilities of current technology.

So what will we need in future Acorn computers? My own belief is that we need better user-interfaces, and the faster the computer is, the better the user-interface can be.

Current Wimp-based operating systems are certainly more intuitive than having to type in obscure instructions at a command line, but they're still not exactly easy-to-use.

The OS of the future should scrap the need for a keyboard and mouse in favour of an A4 touch-sensitive pen-pad, similar to Apple's Newton, and true voice control, and it must be 100% accurate.

With the potential for 100MHz and higher processors sitting in the Risc PC in a few years time, this step might not be so far off.

Until then however, we'll have to make do with existing operating systems. Later this year we'll be able to turn the Risc PC into a fully fledged 486 PC at the touch of a button, thus opening up the professional world of Windows 3.1 software.

There is no technical reason preventing someone turning the Risc PC into a Power (Risc) PC instead, with a PowerPC card, thus giving access to the Mac's System 7 OS.

An Apple spokesperson claimed that Apple, 'will look to licence our operating system to partners when we choose to'. Make your own conclusions on the incredibly exciting future of Acorn from that.

Watford Electronics

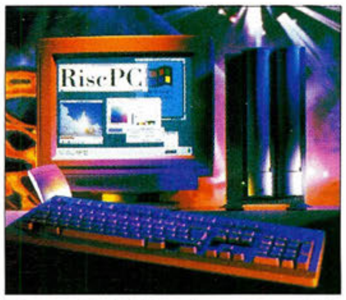
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RiscPC



The new RiscPC from Acorn offers all the traditional strengths of RISC processing, and a great deal more, at a remarkably affordable price.
Based on the 30MHz ARM610 processor, the RiscPC simply leaves the competition standing.
It is the world's most cost-effective, efficient 32-bit RISC computer. The graphics on the RiscPC are astounding - 24-bit colour (with VRAM fitted) and up to 1600 x 1200 pixels. The memory capacity starts at 2Mb and can be expanded to a massive 256Mb. A special slot for a 2nd processor allows you to add another ARM610 or any other processor, so allowing you easy low cost access to DOS and Windows applications.
The standard sound system offers 8 stereo channels, which can be upgraded with the optional 16-bit sound card. Networking options include Econet, Acorn Access and Industry standard Ethernet. There is also a choice of either 14" or 17" monitors.

Features of the RiscPC series:
- 30MHz ARM610 processor
- 2Mb RAM expandable to 256Mb
- 210Mb IDE hard disc
- up to 1600 x 1200 dpi resolution
- 24-bit colour graphics
- 2nd processor slot
- RISC OS 3 v3.5
- up to 8 32-bit expansion slots
- 3.5" 1.6Mb floppy disc drive
- 5.25" drive bay (eg CD-ROM)
- choice of 14" or 17" monitor
- 12 months On-site warranty

	AKF60 Monitor	AKF85 Monitor
RiscPC 600 2M HD210	£1199	£1599
RiscPC 600 5M HD210	£1299	£1699
RiscPC 600 9M HD420	£1599	£1999

(AKF60 - 14" SVGA, AKF85 - 17" SVGA)

Upgrade Options

2Mb RAM upgrade	£85
4Mb RAM upgrade	£149
8Mb RAM upgrade	£299
1Mb VRAM upgrade	£129
2Mb VRAM upgrade	£199
250Mb Hard Drive upgrade	£179
340Mb Hard Drive upgrade	£229
420Mb Hard Drive upgrade	£299
486 PC Card upgrade	£199
Acorn Access for RiscPC	£119
Ethernet Network Interface	£99
Econet Network Interface	£49
Case Module upgrade	£99

Purchase a 486 PC Card at the same time as a RiscPC for only £99.
(delivery of PC Card Sept. 1994)

Acorn PocketBook

PocketBook 256K computer	£169
PocketBook Class Pack	£1699
A-Link (requires RISC OS 3.1)	£42
Parallel Link	£25
128K RAM Disc	£51
256K Flash Disc	£59
512K Flash Disc	£85
Mains Adaptor	£12
Schedule	£19
Plotter	£29

RISC OS Upgrades

Single User Software Upgrade	£74
Hardware Kit (300/440)	£24
Bulk Software Pack (10 users)	£319

ARM3 Turbo Card



Using the latest surface mount technology on a high quality 4 layer PCB, the ARM3 Turbo Card will increase the speed of your A300, A400 or A3000 computer by up to 6 times.
The upgrade can be fitted by the user in A300 and A400 machines, but for owners of the A3000 we can collect, fit and deliver your computer back for an additional £21.
Owners of A300 and old A440 models will need a MEMC1A upgrade to use the ARM3.

Special Offer £89

BUY ARM3 & RISC OS 3. TOGETHER FOR ONLY £165

Acorn 32-bit RISC Computer Systems

ARM POWERED

	Without Monitor	Colour Monitor	AKF52 Monitor	AKF50 Monitor
A3010 Action Pack	£329	£519	£569	£649
A3010 Learning Curve	–	£589	–	–
A3020 2Mb FD	–	£639	£689	£769
A3020 2Mb HD60	–	£759	£809	£889
A4000 2Mb HD105	–	£829	£879	£959
A5000 2Mb HD80	–	–	£1059	£1079
A5000 2M HD210	–	–	£1079	£1099
A5000 4Mb HD210	–	–	£1229	£1259
A4 2M FD	£1289	–	–	–
A4 4M HD60	£1529	–	–	–

FREE OFFERS

Sensible Soccer with A3010 or A3020

Learning Curve with any A5000 system

Battery Pack with any A4 Notebook

0% Finance available on A4000, A5000, A4 and RiscPC. Call 0582 745555 for details.

Acorn

Archimedes IDE Hard Disc Upgrades

The Watford IDE interface allows IDE hard disc drives to be connected to an Archimedes computer. Speeds in excess of SCSI, but at a fraction of the cost.

Features include:
- Fast 16-bit interface (8-bit on A3000)
- Password protection and write protect
- Supports 2 drives per interface
- Up to 4 drives attached to a machine
- Optional on-board 2.5" drive
- Power save mode on supported drives
- Interrupt driven MEMC interface
- Conforms with Acorn IDE specification

All kits are supplied with interface (except A3020 upgrade), connecting cables, fixing screws and comprehensive instructions.

A3000 internal version is also suitable for A3010 and A3020.
A5000 version is for replacement of original drive, if drive is to be used as a second unit the 2nd drive accessory kit will be required.

A300/A400 Internal IDE Drives

Part No.	Capacity	Access Time	Price
ADA 0550	80Mb	18mS	£169
ADA 2000	170Mb	13mS	£199
ADA 2010	250Mb	13mS	£289
ADA 0580	340Mb	16mS	£359
ADA 2030	420Mb	13mS	£469

A5000 Internal IDE Drives

Part No.	Capacity	Access Time	Price
ADA 2040	170Mb	13mS	£179
ADA 2050	250Mb	13mS	£199
ADA 0880	340Mb	16mS	£239
ADA 2060	420Mb	13mS	£309

A3000 External IDE Drives

Part No.	Capacity	Access Time	Price
ADA 1020	80Mb	18mS	£229
ADA 2070	170Mb	13mS	£289
ADA 2080	250Mb	13mS	£339
ADA 2170	340Mb	16mS	£409
ADA 2180	420Mb	13mS	£419

A3000 Internal IDE Drives

Part No.	Capacity	Access Time	Price
ADA 0750	60Mb	19mS	£159
ADA 0720	80Mb	19mS	£199
ADA 0730	120Mb	16mS	£239
ADA 1070	200Mb	13mS	£389
ADA 2090	340Mb	13mS	£509

A300/400 IDE Hard Cards

Part No.	Capacity	Access Time	Price
ADA 0890	60Mb	19mS	£149
ADA 0670	80Mb	19mS	£189
ADA 0680	120Mb	16mS	£229
ADA 1070	200Mb	13mS	£379
ADA 2090	340Mb	13mS	£499

A3020 Internal IDE Drives

Part No.	Capacity	Access Time	Price
ADA 2120	60Mb	19mS	£139
ADA 2130	80Mb	19mS	£179
ADA 2140	120Mb	16mS	£219
ADA 2150	200Mb	13mS	£359
ADA 2160	340Mb	13mS	£479

Accessories

A5000 2nd drive accessory kit	£10
IDE ROM Upgrade to v2.10	£16

Scan256 Handscanner

If you need a 256 grey scale handscanner for your Archimedes or A3000 (external), then look no further.
Scan256 gives you up to 256 grey levels at a maximum resolution of 400dpi and is supplied with state-of-the-art software. This makes it the only sensible scanning and image processing solution for the Acorn 32-bit range of machines.

Features include:
- Multiple copies of an image in memory at once
- Advanced image processing tools
- Convolution digital filtering with over 100 filters
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- Save images in industry standard formats
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- **Scan256 for A3000** £175

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- A3000 Analogue/User card £35
- I/O Podule - User/Ana/1MHz £79
- Archi Analogue/User card £55

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- 16-bit SCSI card £149
- 16-bit SCSI card - 16Kb cache £169
- 16-bit SCSI card – Acorn £249
- ST506 Hard Disc podule £49
- 16-bit IDE interface - A3000/A400 £69
- 8-bit IDE interface - A3000 internal £85

Ultimate Expansion

- Ultimate Expansion – A5000 £39
- Ultimate Expansion – A3000 £39
- Ultimate Expansion – A3010 £41
- Ultimate Expansion – A3020 £38
- SCSI uPodule £69
- Vision Digitiser uPodule £99
- Analogue uPodule £29
- Serial Port uPodule £49
- MIDI uPodule £49
- Scanlight 256 uPodule £229
- PSU Kit for Ultimate Exp. £30

(please call for pricing of above cards with IDE hard drives fitted)

Graphics Cards

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- Chroma 500 Genlock card £419
- Chroma 150 PAL Encoder £169
- Chroma Genlock card £209
- Hawk V8 MKII Digitiser £189
- Eagle M2 Multimedia card £319
- Vision Colour Digitiser £99
- HiVision Colour Digitiser £149

Scanners

- Spectra Colour Handscanner £549
- Scanlight 256 – A300/400 £188
- Scanlight 256 – A3000 £198
- Scanlight Professional £549
- Scanlight Video 256 £199

Networking

- Ethernet card – A300/400 £139
- Ethernet card – A3000 £189
- Econet Module – A300/400 £49
- Econet Module – A3020 £49
- Econet Module – A4 £49
- Econet Interface – RiscPC £49
- Ethernet III card £149
- Ethernet interface – RiscPC £99
- Acorn Access – A3000 £145
- Acorn Access – A3020 £145
- Acorn Access – A5000 £145
- Acorn Access – RiscPC £119
- AUN/Level 4 Fileserver £369
- TCP/IP Protocol suite £199

Miscellaneous

- Floating Point Accelerator £99
- 386 1Mb PC Card – A3020 £225
- 486 4Mb PC Card – A3020 £420
- MIDI Expansion card £65
- MEMC1A Upgrade £29
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- Fan for Backplane £7
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- PowerPad Dual joypad £34
- Arc to BBC Serial Link £16
- Microlin FX Modem/Software £199
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- Archi 1212 Tablet (OS 2 only) £199

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No more tangled mouse cables when you use the Archi Cordless Mouse.

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only **£29**

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- 600 CD-ROM Pack 3 £594
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(CD-ROM Packs include Drive, Interface Cables, Stereo Speakers and some CDs)

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A dual speed CD-ROM drive supplied complete with interface.

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The ideal CD ROM drive for the RISC PC. Based on the Toshiba 4101 Drive. The kit is internal fixing. Available with or without SCSI card.

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Illustrated Holy Bible	£23
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Space Encyclopaedia	£57
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Really Useful CD v2	£47
Times & Sunday Times	£195
Tekkie CD	£99
Pro Artisan v2	£149

Memory Upgrades

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- A310 to 4Mb RAM £149
- A3000 to 2Mb RAM £49
- A3000 to 4Mb RAM £119
- A3010 to 2Mb RAM £49
- A3010 to 4 Mb RAM £135
- A3020/A4000 to 4Mb RAM £79
- A410/1 to 2Mb RAM £40
- A410/1 to 4Mb RAM £80
- A420/1 to 4Mb RAM £120
- A540 additional 4Mb RAM £249
- A5000 to 4Mb RAM £79
- A5000 2Mb to 8Mb RAM £349
- A5000 4Mb to 8Mb RAM £359
- RiscPC additional 2Mb RAM £85
- RiscPC additional 4Mb RAM £149
- RiscPC additional 8Mb RAM £299

(A310 upgrades are dealer fit only – we will collect, fit and deliver computer back for £25)

LaserDirect Printers

Print at high speed up to 600dpi resolution with Computer Concepts' LaserDirect printers.

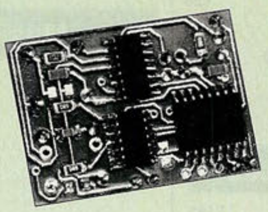
- LaserDirect HiRes 4ppm £799
- LaserDirect HiRes 8ppm £1099
- LaserDirect card for LBP4+ £37

ArcLaser Printers

This range of direct-drive laser printers for the Archimedes gives excellent high speed printing. Models available range from 300dpi A4 size to 1200dpi A3 size.

- ArcLaser A4 300dpi £895
- ArcLaser A4 1200dpi £985
- ArcLaser A3 1200dpi £4995

VIDC Enhancer



The Watford VIDC Enhancer for the Archimedes 300/400 and A3000 computers, caters for all types of Multiscan and VGA monitors.

A disc of utilities is supplied to allow you to define your own modes, and change existing ones. A desktop mode selector is also supplied

- Multiscan VIDC Enhancer £15
- SuperVGA VIDC Enhancer £29
- 9 to 15 pin VGA Adaptor £9

Archi Hand Scanner

Watford's MKII hand scanner for the Archimedes and A3000 has a maximum resolution of 400dpi, and a scan width of 4". The software is supplied on ROM, so there are no discs to load. Features include: cropping and scaling images, X flip and Y flip, and edge detection allows you to transform solid images into outlines.

- A300/400/A5000 version £89
- A3000 external version £109
- v1.10 ROM Upgrade £20

Upgrade to A4 Scanner

For existing users of the Watford MK2 Hand Scanner we can offer you an upgrade to the A4 Scanner for only **£129**

Archi A4 Scanner



The 216mm scanning width can cope with both desktop scanning of single sheets, photographs, etc, with its detachable sheet feeder, or used as an A4 wide hand scanner. 64 grey levels are produced from the scanner at resolutions up to 400dpi. The software included on ROM allows you to adjust contrast and brightness of the scanned image, rotate, shear and cut out sections of the image. The scanner uses a green light source which gives improved contrast on images over conventional red light scanners.

- A4 Scanner for A300/A400 £199
- A4 Scanner for A3000 £229
- Sheet Feeder for A4 Scanner £69

PC Cards

Transform your Archimedes so you can run standard PC MS-DOS software and even Windows 3.1 with the Aleph One range of PC cards.

- 386 1Mb RAM - A3020/A4000 £225
- 486 4Mb RAM - A3020/A4000 £420
- 486 25MHz 0Mb RAM - A5000 £369
- 486 25MHz 4Mb RAM - A5000 £529
- 486 50MHz 0Mb RAM - A5000 £449
- 486 50MHz 4Mb RAM - A5000 £609

Coming soon...

a revolution in scanning technology for your Archimedes or RiscPC computer. Call 0582 745555 for more details

Archi Accessories

- A3000 Keyboard Dustcover £5
- A3000 Combined Dustcover £9
- A3010 Keyboard Dustcover £5
- A300/400 Dustcover £9
- Archi Keyboard only Dustcover £5
- A5000 Dustcover £9
- 14" Monitor Dustcover £6
- Perspex Keyboard Cover £8
- A3000 Monitor Stand (Acorn) £29
- A3000 Monitor Stand (WE) £16
- A3000 Podule Case £15
- A3000 Carry Case £10
- A4 Notebook Carry Case £35
- A4 Notebook Battery Pack £49
- A4 Notebook Mains Adaptor £69
- Archi Keyboard Extension Lead £8
- Replacement Mouse (Acorn) £39
- Archi MK4 Replacement Mouse £29
- Quest Tracerball £25
- Mouse Port Splitter £10
- Voltmace Delta Cat Joystick £25
- Archi Cordless Mouse £29

Fax/Modem Bundle

Now you can use your Archimedes computer as a fax machine. Prepare a fax, send it using the ArcFax software. Receiving a fax is simple - display on the screen or print out on any RISC OS printer.

- Fax/Modem with ArcFax software £199

Archimedes Spares

- Cased Archimedes keyboard £99
- Replacement Archimedes keyboard £75
- A3000 replacement keyboard £35
- A300/A400 power supply unit £79
- A3000 power supply unit £49
- A540/R260 power supply unit £79
- A5000 power supply unit £69
- 3.5" FDD for A3000/A400/A540 £49
- 3.5" FDD for A5000/A4000 £49
- ARM2 CPU £29
- MEMC 1A memory controller £25
- VIDC video controller £39
- IOC I/O controller £39
- Fan filter £4
- Digitech mouse cable £12
- Logitech mouse cable £12
- Logitech mouse ball £7
- Replacement keyboard cable £17
- 1.2v NiCad battery for A3000 £5
- AA batteries for A300/A400 (2pk) £2
- Function keystrip holder £4
- Eject button for Citizen FDD £2
- Loudspeaker £6

TO ORDER CALL OUR SALES HOTLINE 0582 745555
or FAX YOUR ORDER on 0582 488588

Access VISA AMERICAN EXPRESS

ARCHIMEDES SOFTWARE

Below are listed the more popular software titles for the Archimedes. If you cannot see the title you require, please call for price and availability.

Educational

10 out of 10 Early Essentials	£18
10 out of 10 Junior Essentials	£18
10 out of 10 Maths - Number	£18
10 out of 10 Maths - Algebra	£18
10 out of 10 Maths - Statistics	£18
10 out of 10 English	£18
10 out of 10 French	£18
10 out of 10 Dinosaurs	£18
10 out of 10 Driving Test	£18
Advantage	£32
Animated Alphabet	£18
Animated Numbers	£18
An Eye for Spelling	£31
Arcventure I – Romans	£24
Arcventure II – Egyptians	£24
Arcventure III – Vikings	£24
Around the World in 80 Days	TBA
Aztecs	£37
Badger Trails	£34
Best Four Adventure	£34
Best Four Language	£34
Best Four Maths	£34
Body	£17
Bookbinder	£43
Bookstore – Primary	£35
Bookstore –Secondary	£52
Britain since 1930	£26
Bumper Disc 1	£14
Bumper Disc 2	£14
Connections	£27
Converta Key	£9
Crystal Rain Forest	£34
Desktop Stories	£35
Dream Time	£19
Export, Trade and Industry	£34
First Page	£39
First Logo	£20
Farm (5-7 years)	£18
Fleet Street Phantom	£22
Food for Thought	£17
Fun School 3 Blue (under 5)	£17
Fun School 3 Red (5-7 years)	£17
Fun School 3 Green (over 7)	£17
Fun School 4 Red (under 5)	£17
Fun School 4 Green (5-7 yrs)	£17
Fun School 4 Blue (over 7)	£17
Geordie Racer	£24
Glimpse	£8
Graph IT	£17
Hilighter	£30
Insight	£68
Investigating Maths	£34
Jigsaw	£18
Landmarks – Aztec	£17
Landmarks – Civil War	£17
Landmarks – Columbus	£17
Landmarks – Egypt	£17
Landmarks – Elizabeth I	£17
Landmarks – Rainforest	£17
Landmarks – Victorians	£17
Landmarks – World War II	£17
Linkword – French	£32
Linkword – German	£32
Linkword – Spanish	£32
Magpie	£58
Making of the UK	£35
Mapping Skills	£25
Mapventure	£22
Medieval Realms	£35
Naughty Stories vol.I	£48
Naughty Stories vol.2	£48
Numerator	£33
Picture Book	£14
Podd	£23
Recall	£36
Seelinks – Ourselves	£26
Seelinks – Pondwatch	£34
Seelinks – Tourism	£54
Seelinks – Transport	£34
Selladore Tales	£23
Settlement	£30
Snippet	£31
Space Mission Mada	£22
Splash	£18
Stig of the Dump	£21
Story Starts	£24
Talking Pendown	£59
Teddy Bears Picnic	£22
Topographer	£62
Victorians	£19
Viewpoints	£33
Wizards Revenge	£16

Games

Adventures of Sylvia Lane	£19
Air Supremacy	£13
Apocalypse	£14
Arcade 3 Compilation	£11
Battle Chess	£21
Birds of War	**£25**
Black Angel	£23
Boogie Buggie	£14
Break 147 & Superpool	£24
Bug Hunter in Space	£9
Carnage Inc.	**£20**
Cataclysm	£15
Champions Compilation	£21
Chess 3D	£14
Chocks Away Compendium	£26
Chocks Away Extra Missions	£12
Chopper Force	£18
Crystal Maze	**£29**
Cyber Chess	£25
Cycloids	£17
Demons Lair	£18
Diggers	£18
Dungeon	**£24**
Ego Repton 4	£17
Elite	£31
Enter the Realm	£17
E-Type Compendium	£17
E-Type Extra 100 Miles	£12
Fervour	£18
F.R.E.D.	**£17**
Galactic Dan	£14
Games Wizard	£17
Gods	£18
Grevious Bodily Arm	£14
Haunted House	**£20**
Heimdall	£24
Hero Quest	£21
Holed Out Compendium	£12
Interdictor 2	£22
Ixion	£22
Jahangir Khan Squash	£19
James Pond	£18
James Pond 2 - Robocod	**£21**
Lemmings	£18
Lemmings 2 - Tribes	**£24**
Lotus Turbo Challenge II	£18
Mad Professor Mariati	£14
Magic Pockets	£22
Master Break	£13
Man at Arms	£14
Manchester Utd in Europe	£18
Nebulus	£18
Oh No! More Lemmings	£14
Omar Sharif's Bridge	£18
Pandora's Box	£17
Pipe Mania	£15
Play It Again Sam 1	£17
Play It Again Sam 2	£17
Play It Again Sam 3	£17
Populous	£21
Powerband	£14
Powermonger	£24
Quark	£19
Quazar	£10
Real McCoy 2	£21
Real McCoy 3	£21
Real McCoy 4	£21
Return to Doom	£16
Repton 3	£14
Saloon Cars Deluxe	**£24**
Sensible Soccer	£22
Sim City	**£21**
Simon the Sorcerer	£32
Stunt Racer 2000	**£24**
SWIV	£18
Sylvia Lane	**£18**
Striker	£17
Technodream	£18
The Last Ninja	£18
Twin World	£13
Virtual Golf	**£24**
Warlocks	£24
Worldscape	£16
White Magic 2	£15
Xenon 2	**£20**
Zool	**£18**

NEW GAMES

Diggers	**£18**
Sensible Soccer	**£22**
Simon the Sorcerer	**£32**
Crystal Maze	**£29**

DTP

Impression Junior	£63
Impression II	£109
Impression Borders Disc	£12
Impression Business Sup.	£38
Impression Style	**£79**
Impression Publisher	£135
Impression Publisher OPI	£223
Ovation	£82

DTP Utilities

Desktop Thesaurus	£16
Equasor	£36
Show Page	£139
Spellmaster	£42
Sleuth OCR	£40
Type Studio	£37
Optical OCR	TBA

Word Processors

DeskEdit 3	£24
Data Word	£14
Easiwriter II	£114
Easiword Plus	£42
Pendown	£45
Pendown Plus	£67
Primeword	£50
Wordz	**£84**

Databases

Eureka	£95
ProSheet	£39
Resultz	£105
Schema	£89
DataVision	£66
Flexifile	£68
Genesis Project	£49
Genesis Professional	£119
Knowledge Organiser	£75
Masterfile III	£45
Multistore v2.01	£99
Pinpoint v2	£83
Pinpoint Junior	£23
Recordz	TBA
S-Base v2 Developer	£139
S-Base v2 Personal	£69

Integrated

Acorn Advance	**£85**
Desktop Office	£69
Pipedream 3	£55
Pipedream 4	£93
Fireworkz	£129

Languages

Acorn Desktop Assembler	£118
Acorn Desktop C	£179
Acorn PC Soft	£89
Control Logo	£20
Easy C	**£45**
Logotron Logo	£45
RiscBASIC Compiler v3.0	£66
RiscFORTH Compiler	£66
Robo Logo v1.1	£37

Site Licences

Advance Primary Licence	£181
Advance Secondary Licence	£440
Artworks	£540
Impression Style	£435
Impression II	£542
Ovation DTP	£475
Pinpoint	£379
Pipedream 4	£695
S-Base	£399

Communications

ArcTerm 7	£64
Hearsay 2	£75
ArcFax	£35 + VAT

Graphics

New Release

ProArt 24 is the latest addition to Clares range of graphic packages. Written for the new RiscPC, this powerful software takes advantage of the machines 24-bit colour capabilities and more.

ProArt 24 — £139

Artisan 2	£42
Autosketch II	£65
ArcTist	£14
Atelier	£59
Artworks	£105
Chartwell	£24
Craftshop 1	£18
Craftshop 2	£18
Euclid 2	£59
Film Maker v5.1	£55
GraphBox	£54
GraphBox Professional	£102
Illusionist	£68
Image Animator	£65
Kid Pix	**£34**
Plot	£66
Poster	£74
Presenter GTI	£65
PrimeArt	£46
Pro Artisan 2	**£99**
ProArt 24	£139
Render Bender II	£89
Rephorm	£49
Revelation II	£74
Revelation Image Pro	£125
Solids Render v5.1	£75
Titler	£114

CAD

Arc PCB v1.8	£79
Arc PCB Professional v3.2	£169
Arc PCB Schematics v5.1	£229
CADet	£125
SolidCAD v5.1	£65
SolidTools v5.1	£169
PowerRouter	£129
Excellon Drill	£53
Oak Parametric Design Tool	£149
WordCAD	£69

Business

Business Accounts System	£275
Business Account Modules	£85
Payroll Manager v2.0	£66
Prophet Accounts	£131
Home Accounts	£33
Financial Accountant	£225
Shareholder Professional	£195
Micro Trader System	£275
Micro Trader Modules	£75
PlanING	£95
ProjectING	£295

Music

Rhapsody 2	£45
Rhapsody 3	£78
Notate	£57
Armadeus	£55
Vox Box	£45
Score Draw	£45

Printer Drivers

Expression PS	£19
Citizen Colour Driver - OS 2	£15
Deskjet 500C/550C Driver	£15
Epson JX Printer Driver	£15
Star Colour Driver - OS 2	£15
TurboDriver - Canon BJ	£39
TurboDriver - Epson Stylus	£39
TurboDriver - HP	£39
Show Page	£139
Repro	£42
Printers upgrade disc	£5
ImageMaster scanner software	£35
Twain drivers for scanners	£20

Books

!Help - RISC OS 3	£10
!Help - Draw	£16
Archimedes Assembly Lang.	£15
Archimedes Operating Syst.	£16
A3000 Technical Manual	£29
A5000 Technical Manual	£65
A3010/A4000 Technical Manual	£30
A540 Technical Manual	£66
A4 Technical Manual	£65
A4 Portable Handbook	£7
A4 Welcome Guide	£10
Ansi C Rel.4 User Guide	£26
Acorn to PC	£5
Artworks Made Easy	**£15**
Archi Games Maker Manual	£15
ARM Technical Data Manual	£10
BBC BASIC Reference Guide	£20
Budget DTP on the Arc	£13
Beginners Guide to Wimp Prog.	£13
Basic Wimp Programming	£15
C: Dabhand Guide 3e	£17
C Programming Language	£27
Control on the Archimedes	£10
First Impressions	£28
File Handling for All	£10
First Steps in Prog. RISC OS	£15
Good Impressions	£25
Graphics on the Arm	£15
Impression II - Dabhand Guide	£15
Mastering 1st Word Plus	£14
RISC OS Style Guide	£10
RISC OS 2 Prog. Ref. Man.	£79
RISC OS 3 Prog. Ref. Man.	£99
RISC OS 3 Apps/User Gd.	£20
RISC OS 3 First Steps	**£15**
RiscPC 600 Welcome Guide	£5
RiscPC 600 Technical Man.	POA
Wimp Programming for All	£13

Software Bundles

• **Arcventure** Romans, Egyptians, Vikings	**£65**
• **Linkword** French, German, Spanish	**£87**
• **Lemmings &** Oh No! More Lemmings	**£27**
• **Crystal Maze &** Games Wizard	**£44**
• **Artworks &** Clip Art CD	**£119**
• **Impression II &** Business Supplement	**£130**
• **PC Emulator &** Acorn Advance	**£155**
• **Ovation & Thesaurus**	**£69**

SPECIAL OFFERS

• Acorn DTP	£15
• 1st Word Plus	£10
• Lemmings	£10
• Quest for Gold (HD)	£5
• Pacmania	£5
• Genesis	£15

Printer Drivers

AUN/Level4 Fileserver	£369
TCP/IP Protocol Suite	£199
Speech!	£17
Investigator 3	£49
MultiFS	£29
DFS Reader	£5
Articulate	£18
AudioWorks	£45
Compression	£38
GerberPlot	£54
Hard Disc Companion v2	£38
Oak Logic	£69
Ancestry	£58
RISC OS 3 ID Utilities Discs	£10
RISC OS Upgrade - TV Digi	£25

Laser Printers

All Laser printers (excluding HP Lasers) include 12 Months On-Site maintenance

Brother HL6	6ppm	£422
Brother HL6V	6ppm	£465
Canon LBP4+ 1.5M RAM	4ppm	£635
Canon LBP4U	4ppm	£480
Canon Laserjet 4i		£480
Canon LBP-8 Plus IIIR	8ppm	£1559
Canon LBP-8 IV 600DPI	8ppm	£925
Epson EPL5000	6ppm	£433
Epson EPL-5200	6ppm	£483
Epson EPL-7500 PS	6ppm	£1135
Fujitsu VM600	6ppm	£529
HP Laserjet 4 ML	4ppm	£745
HP Laserjet 4	8ppm	£949
HP Laserjet 4L	4ppm	£466
HP Laserjet 4M	8ppm	£1284
HP Laserjet 4P	4ppm	£716
HP Laserjet 4MP	4ppm	£975
HP Laserjet 4Si	16ppm	£2175
HP Laserjet 4SiMX	16ppm	£3259
NEC 610 Super Script	6ppm	£422
OKI OL400EX	4ppm	£379
OKI OL410EX	4ppm	£523
OKI OL 850 PS	8ppm	£770
Panasonic KX-P4400	4ppm	£360
Panasonic KX-P4410	5ppm*	£424
Panasonic KX-P4430	5ppm*	£527
Panasonic KX-P4440	10ppm*	£777
Panasonic KX-P5400 PS	4ppm	£599
Star LS-5	5ppm	£365
Star LS-5 EX (RISC Based)	5ppm	£499
Star LS-5 TT True Type+Mac	5ppm	£530

*2 years on-site warranty

Laser Toners

Canon 2, 3 & 4	£52	KX-P4400/5400	£12
Canon LBP4U	£52	KX-P4450/50i/55	£19
Canon 8/Star LP8	£52	KX-P4410/30	£27
Canon LBP8-IV	£65	KX-P4420	£22
Epson GQ	£14	NEC 290	£78
EPL 40/41/4300	£63	NEC S60/60P/62P	£89
EPL 5200	£85	OKI OL400/800	£19
EPL 71/7500	£117	OKI OL400e	£17
HPII/D, III/D	£52	Star LP4	£48
HP IIP, IIIP	£46	Star LS5	£63
HP4/4M	£70	VM800 8K pages	£99
HP Laserjet 4L	£45	Qume Crystal(3)	£99

Laser RAM Upgrades

Type	1M	2M	4M	8M
HPIIP; III/P/D	£54	£90	£132	
HPII & IID	£65	£110	£175	
HPIIIsi	£57	£85	£158	£299
LJ4/4L/4M	£65	£85	£150	£299
EPL40/41/4300	£70	£110	£205	
EPL 50/5200	£58	£115	£215	
KX4410/30	£70	£110	£199	
KX4420/50i	£65	£89	£149	
KX4400	£89	£129	£239	

Jetpage Postscript Cartridge

- HP IIP/IIIP £225 • IID & III £227

Various Add-Ons

- HP Premier Font Collection £19
- Laserjet Various Font C'tridges from £45
- HP Postscript Module for LJ4 £270
- Laserjet 4 Powered envelope feeder £199
- Jetdirect Ethernet Card for Laserjet IIIsi/4/4Si £339
- 500 Sheet paper cassette (3rd Bin) £205
- HPIIP/IIIP Lower Cassette Tray £115
- Canon LBP-4 Lower Cassette Tray £96
- Ozone Filter P4420 £9; P4450/55 £20

Despite appearances, we offer you very little choice.

At **Watford Electronics,** we will only offer any product when we are convinced that we can sell it at the best price with the right level of support. It's an approach that our thousands of customers appreciate, for we are now celebrating twenty-one years in the business. So as you look through all the lists of items that follow and discover how competitive we are, you'll discover just how little choice you have. **You simply must call us.**

Panasonic Printers

	Printer	CSF	Ribbon
KX-P1150	£89	£59	£6
KX-P1624	£210	£126	£8
KX-P1695	£267	£126	£6
KX-P2023	£109	£155	£8
KX-P2123M	£127	£69	£7
KX-P2124	£209	£89	£7
KX-P2624	£255#	£126	£8

#Includes 12 months on-site warranty

- Colour Kit for KX-P2180; KX-P2123 and KX-P2124 £30
- Dustcover for 80 column printers £6
- Serial Interface for above Printers £46
- Black Ribbons for P1081, 1180, 1124 £7
- 32K Buffer for above Printers £16

P.S. Our original Panasonic Ribbons are guaranteed to last 3 million characters.

Canon Bubblejet Printers

	Printer	CSF	2nd Bin	Ink Cart
BJ10SX	£141	£43	–	£15
BJ200	£183	–	–	£16
BJ230	£243	–	–	£16
BJ300*	£322	£88	£88	£11
BJ330*	£372	£92	£79	£11
BJC600	£412	–	–	£7
BJC800	£1075	–	–	£16
BJC820	£1230	–	–	–

Black Cart. for: BJC600 £6; BJC800 £13

- Optional Battery Pack for BJ10EX/SX £33
- BJ10E/10EX/10SX/200/230 Jumbo Ink Refill pack (twice cartridge volume) £12

* includes 12 months on site warranty

Citizen Printers

120D+ parallel	£90	Swift 200	£138
120D+ Serial	£109	Swift 200C	£148
ABC 24pin Mono	£115	Swift 240	£165
ABC 24pin Col.	£135	Swift 240C#	£185
Swift 90	£115	Swift 24X	£235
Swift 90C	£122		

2 years warranty on Citizen Printers.
FREE Windows Printer Driver

- Swift 24 Ribbons: Black £4 Colour £13
- Cut Sheet Feeder for 80 col. printers £75
- Citizen 120D Ribbons £3.50

Star Printers

	Printer	CSF	Ribbon
LC15	£179	£135	£5
LC100C	£89	£65	£9
LC24-15 Mk2	£235	£135	£5
LC24-20 Mk2	£113	£65	£5
LC24-30C	£148	£–	£–
LC24-100	£95	£69	£5
LC24-300C	£178	£–	£–
SJ48	£162	£–	£–
SJ144 colour	£266	£–	£–
XB24-200C	£320#	£80	£12
XB24-250C	£385#	£139	£12
ZA200	£255	£80	£12
ZA250	£315	£80	£12

Includes 12 months on-site warranty

- Black Ribbons for Colour Printers £5
- Serial 8K I'face LC10/15/24/200 £52
- 32K Buffer LC/XB24-10; 15; 200 £52

Scanners

AT – HP-ScanJet IIP **£500;** IIC	£949
PS/2 – HP-ScanJet IIP **£501;** IIC	£950
HP Auto Doc Feeder IIP **£229;** IIC	£365
HP ScanJet II CX	£689

Epson A4 Scanners: Supplied complete with Pic Publisher LE, Omni Direct OCR, Interface card & Cables

GTX6500P	£535;	GTX6500S	£599
GTX8000P	£699;	GTX8000S	£760

Epson Printers

	Printer	CSF	Ribbon
DFX5000C	£1095	£–	£23
FX870	£226	£47	£4
FX1170	£284	£69	£6
LQ100	£119	£–	£4
LQ570+	£189	£45	£4
LQ870	£353	£45	£6
LQ150 Col	£159	£–	£–
LQ1070	£285	£69	£6
LQ1170+	£409	–	£10
LQ2550	£679	£360	£6
LX100	£109	£–	£4
LX400	£91	£69	£4
LX850+	£134	£69	£4
LX1050	£174	£125	£6
SQ870	£415	£170	£23
SQ1170	£560	£155	£23
Stylus 300	£155	£–	£10
Stylus 800	£182	£–	£10
Stylus 1000	£340	£–	£10

Epson RS232 Interface
Standard **£28;** +8K Buffer **£75**

- LQ100 Tractor Feed £29
- FX850/LQ800/850 Tractor Feed £69
- FX/LQ1050 Tractor Feed £85
- LQ2500/2550 Tractor Feed £90
- Dustcovers for 80 col printers £6

NEC Printers

	Printer	CSF	Ribbon
P2Q	£134	£59	£6
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Showing off

In the last of his three-part series, Mark Hobson reveals how to plot static and moving sprites and add music to your demo

In last month's article, we looked at two more modules that can be implemented into our ever-growing demo system. Unfortunately, this month sees the end of the series, but luckily I have hand-crafted three more mind-numbingly amazing modules to top off the demo.

So to ease you in this month, I will start by showing how large sprites can be plotted in a rather fast and cunning way.



The finished routine as seen on the *Acorn User* Cover Disc

Background sprites

Most demos tend to have a large sprite as a backdrop, usually a logo or something similar, either stationary or moving around in the background.

There are two ways that one can plot sprites, either by writing a flexible sprite routine that can handle any sprite under any circumstances, or by writing several fast but specific sprite routines.

By a specific sprite routine I mean, for example, a piece of code that can only handle a certain size sprite, with no sprite-clipping facilities.

An average flexible sprite routine would plot a sprite byte by byte, row by row with masks if necessary, whilst checking whether to clip the sprite. This method is too slow when writing speed-critical programs such as demos.

By knowing the width and height of the sprite to be plotted, we can speed the program up considerably. Because the width is a known value, the code to plot one line of the sprite can be optimised by removing the need for a loop, and replacing it with the minimum number of LDM and STM instructions required.

We can also remove the loop to plot each line of the sprite, by assembling the code to display one line the necessary number of times. This will be executed faster because it removes the instructions to decrement the count, compare it with zero and branch if not equal.

For large sprites, these changes can be highly noticeable, not only because it removes three extra instructions for each line plotted, but because a branch instruction breaks the pipelining process of the Arm chip.

Usually the Arm works on three instructions at a time: processing one, decoding the next and fetching the third from memory. This requires the instructions to occupy consecutive words in memory. Every time the program branches, the processor must 'discard' two instructions and start again, with a consequent time penalty.

The module on the cover disc displays the *Acorn User* logo; a sprite with dimensions of 236 by 69 pixels. 236 pixels is 59 words of four pixels – seven blocks of eight words with one block of three extra.

The program can be altered to display different size sprites, because I have used a macro function to assemble the fastest code possible for a given width, breaking the width down as above.

As the module is introduced into the demo, the sprite appears to emerge out of the water. This is achieved by changing the destination address of the sprite each frame.

The module supplied doesn't support a method for the sprite to be moved each frame. This could quite easily be rectified, by building a table of destination screen offsets through which the program would cycle.

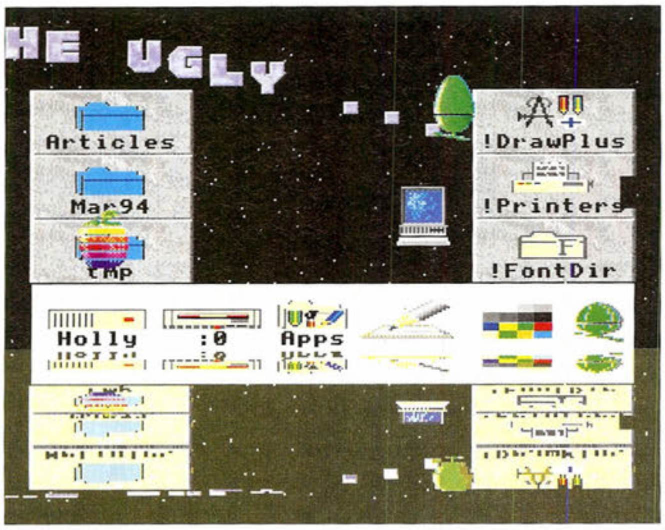
A possible table could allow the sprite to move vertically in a sine wave fashion. Remember though, that the screen offset must be word-aligned, thus limiting horizontal movement to steps of four pixels at a time.

Bouncing balls

This module allows a number of fixed-sized sprites to be bounced within a bounding box. There are three main stages in creating such a module:

1 Deciding upon what data structure is needed
2 Plotting the sprites with masks
3 Moving the sprites whilst applying gravity

Firstly, the data structure required must be considered. For a bouncing object, we need to know not just the screen position of the sprite, but the x



The look of the demo can be changed by editing the sprite files

and y coordinates, as they will need to be changed independently later on.

Obviously, the velocities in both dimensions must be known to calculate the next position for each frame.

Because of the way the balls are introduced, the program also needs to know the vertical velocity after the object has hit the ground; this will be covered in more detail later. Therefore, each object will need the following data:

- x and y position
- horizontal and vertical velocities
- sprite number
- vertical velocity after bounce

and these will be stored in a table when the module is compiled.

To display the sprites, each frame requires a loop to scan through the table, plotting the necessary sprite at the given coordinates. The screen address is calculated from the x and y coordinates (in pixels), by multiplying y by 320, and adding x to the result.

In assembly, this can be performed using shifts, which are faster than multiplication:

```
screen offset = (y * 320) + x
= (y * 256) + (y * 64) + x
= (y * 1<<8) + (y * 1<<6) + x
= (y << 8) + (y << 6) + x
```

Plotting the sprite at this address uses the same method as the logo module does, but with masks. So now all we need to concern ourselves with is the problem of creating a realistic bounce effect.

Consider bouncing an object within a bounding box without gravity. Every frame, the horizontal velocity – positive to the right, negative to the left – would be added to the x position, and the vertical velocity – positive downwards, negative upwards – would be added to the y position.

When the object reached one of the edges of the bounding box, the corresponding velocity would be inverted; negative to positive and vice versa. Now we must simulate a gravitational pull upon the object. For this effect, a constant value must be added to the vertical velocity each frame; this will produce a parabolic velocity.

The constant value is a measure of the strength of gravity, which is a measure of acceleration towards the base of the screen.

Purely for effect, the module allows the ball's initial position to be above the top of the screen, so the ball can be introduced by scrolling down into the screen.

This has one side-effect; when the ball's vertical velocity is inverted after colliding with the ground, it would eventually return to its initial height which is off the top of the screen, and therefore keep appearing and disappearing from view.

Correcting this involves resetting the vertical velocity to a preset value – held in the table – after hitting the ground. The preset value is, in effect, a measure of how high the ball will bounce, regardless of its initial position. This may go against the rules of physics, but it sure does look good.

Music

Just about all demos these days tend to have some sort of music playing to set the atmosphere. One of the most common forms of widely available music are *SoundTracker* files.

In case you do not already know, *SoundTracker* originated as a public domain program on the Amiga which allowed people with little musical knowledge to create reasonable tunes. Fairly recently, several reincarnations have been produced for Acorn machines which allow the creation of music.

For a long time, stand-alone programs to play *SoundTracker* music have been readily available in the public domain. An exact explanation of how the play routine works would be out of the scope of this article, therefore I have provided a module which can be used within your own demos, without your needing to know the techniques behind it.

The module was developed from the source code of a play routine written by The Serial Port several years ago. It has been adapted to work just like any other module does under the modular demo system, so it does not require an extra Risc OS play routine module.

When compiled, the module takes a *SoundTracker* file called *Music* within it's directory, and outputs a module composed of the play routine code and music data.

When the demo initialises and finalises the module, the music starts and stops respectively. With each frame the next part of the music is played, therefore it does not run on interrupts as the Risc OS module versions do.

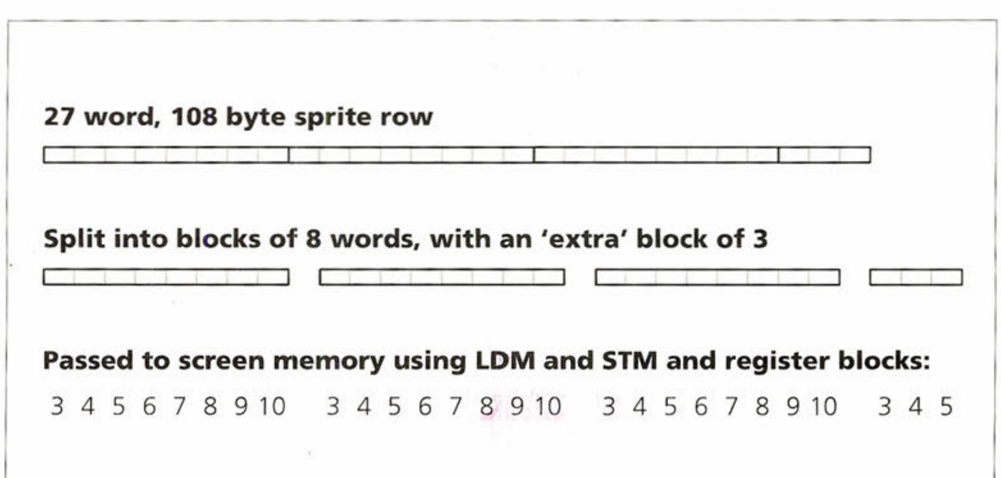
If you do wish to understand how the module plays the music, the source code is fully annotated.

The music module is not actually used within the demo on the cover disc because the processor cannot handle all six modules running at 50 frames per second.

By limiting which modules are run, music can be played alongside the demo. Arm 3 machines should be able to cope, as well

And that, I'm afraid, is the end of our demo writing series. I hope that it has helped to clarify the complexity surrounding the process of creating your own demos, and has presented a system to simplify the development.

Don't forget, if you create any modules or demos for use with the system, send them in. You never know, the best ones may even get published on the cover disc. Until then, happy demoing.



How to plote a fixed-width sprite to the screen quality

Prophet

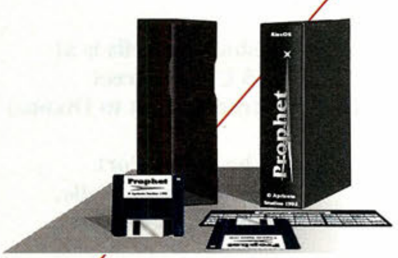
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Back to Basics

In the penultimate article on Basic programming, David Matthewman looks at reading and writing files

FXFiles are a common and useful means of transferring data to and from a program. The program reads the data in the file in much the same way as it reads data from DATA statements, which were covered last month.

There are a number of advantages to reading data from files. The data can easily be changed without editing the program, and the program can itself write data to a file.

Basic provides a number of powerful commands for manipulating files.

Opening and closing files

First, open your file. There are three related Basic commands to do this. All take a string variable containing the filename and return an integer containing the file handle.

The file handle is a number that the Risc OS filing system will use to refer internally to the file. You will never need to know the value of this handle, but you should check that it is not zero, as this indicates an error when opening the file.

The three commands are:

```
handle%=OPENIN(filename$)
handle%=OPENOUT(filename$)
handle%=OPENUP(filename$)
```

OPENIN opens a file for input, OPENOUT opens a file for output and OPENUP opens one for both.

A file of the right name must exist when using OPENIN, but if it exists when using the other two commands it will be deleted and overwritten.

Once the file has been opened, EXT#handle% will give the size of the file, and PTR#handle% the current position in the file, in bytes. Both of these can be set, for example:

```
PTR#handle% = PTR#handle%+4
```

would move the file pointer on four bytes – one word – and

```
EXT#handle% = EXT#handle%
1024
```

would make a file 1k shorter.

Byte by byte

At the simplest level, files can be read and written one byte at a time using BGET# and BPUT#.

Both of these increase the value of PTR# by one automatically, and so sequences of BGET#s and BPUT#s can be used to read and write blocks of bytes.

When the last byte in the file has been read, EOF#handle% is set to TRUE. This can be tested for to avoid running off the end of the file. The central loop of Listing 1 is of the form:

```
NOT EOF#handle%
 var% = BGET#handle%
 ... do something ...
ENDWHILE
```

which reads in the entire file, byte by byte.

Listing 1 takes a text file and prints it to the screen, printing the percentage of the file read between each line.

In order to run Listing 1, you must first run the *SetDir* file in the *BasicProg* directory. This tells the program where to find the *File1* file.

If you copy the files in the *BasicProg* directory to another directory, remember to copy the *SetDir* file and run it to let the program know where it can now find the *File1* file.

When you have finished with a file, you should use CLOSE#handle% to let the filing system know. This is essential when writing to a file, as output is buffered and the last block of a file will not be written if it is not CLOSE#ed.

Formatted input

Reading one byte at a time is all very well, but sometimes we want to read several bytes at one go, to input a string or a large number. The statements to read and write blocks of data are:

```
INPUT#handle%,<data>
PRINT#handle%,<data>
```

where <data> can be one or more string, integer or real variables.

Listing 2 shows how to use these statements in a program. As in listing 1, the program loops until the end of the file is found.

This time though, instead of reading the file byte by byte, each INPUT# statement reads a string from *File2*, and each OUTPUT# statement writes the string back to *File3*, prefixing each line with a line number.

Because listing 2 writes output to a file, it cannot be run from the cover disc and must be copied to another disc first. Remember to copy at least the *SetVar* and *File2* programs as well.

Line 18 of listing 2 sets *File3*'s filetype to TEXT. The filetype affects the file's appearence on the desktop, and dictates what happens to the file when it is run. When a TEXT file is run, Risc OS loads it into a text editor.

If you look at *File2* and *File3* in a text editor, you will see that they are not in a 'plain text' format. All the strings are

backwards and the numbers are unrecognisable.

This is because Basic reads and writes variables using INPUT# and PRINT# in a special format related to the format in which it stores them in memory.

Strings are stored with the characters written in reverse order, prefixed by zero and the string length. Integer variables are five bytes long: &40 and four bytes of data.

Reals are six bytes long: &FF, four bytes representing the digits of the number – the mantissa – and one byte for the exponent. In the case of the numbers this makes storage considerably more compact, at the expense of easy readability.

If you haven't recognised the text already, then inserting the line

```
PRINT in$
```

in the WHILE loop in listing 2 will display it.

*commands

There are a number of operating system commands which, while not themselves part of the Basic language, are very useful for manipulating files.

There are two ways of using them from Basic. The first is to use a star (*) command as in:

```
*LOAD Sprites 3000
```

This is unfortunately very limiting. The two parameters, Sprites and 3000 cannot be variables and must be the verbatim name and load address of the file to be loaded.

Furthermore, there cannot be any statements on a line after a star command – the usual method of separating statements with a colon doesn't work.

Fortunately, Basic provides another way of using operating system commands, OSCLI. This is used as follows:

```
OSCLI("LOAD Sprites 3000")
```

The text inside the brackets is sent to the operating system as before, but it may be a string variable, or even several variables joined together. For example:

```
OSCLI("LOAD "+filename$+"
"+STR$(address%))
```

would be a valid statement, and generally of more use in a program.

In addition, because OSCLI is a valid Basic statement and not an operating system command, it can be followed on the same line by other Basic statements separated by colons.

Operating system commands which may be useful for file manipulation in Basic include:

```
*LOAD
*SAVE
*DELETE
*MOUNT
*RUN
*SETTYPE
```

the last of which appears in listing 2 and was mentioned earlier.

The syntax of these commands can be found in the user guide that came with your computer – there isn't room to describe it in detail here.

That's enough on files for this month. I'm sure you're itching to rush off and experiment with your new-found skills in loading and saving data.

Next month I will wrap up the series with a look at how to access the memory of the machine directly, and will have a round up of what books are available, which tackle Basic programming more extensively than is possible here.

Listing 1

```
REM >Listing1
REM Reads and displays a text file
:
ON ERROR REPORT: PRINT " at line ";ERL:END
file$ = "<BackToBasics$Dir>.File1"
handle% = OPENIN(file$)
IF handle% = 0 THEN PRINT "File ";file$;" not found.":
END
WHILE NOT EOF#handle%
 byte% = BGET#handle%
 IF (byte%=10) OR (byte%>=32) THEN
  PRINT CHR$(byte%);
 ELSE
  PRINT "."
 ENDIF
 IF (byte%=10) PRINT 'INT(PTR#handle%*100/EXT#han-
dle%);"%"
ENDWHILE
CLOSE#handle%
END
```

Listing 2

```
REM >Listing2
REM This program will copy a text file, numbering the
lines
:
ON ERROR REPORT: PRINT " at line ";ERL:END
filein$ = "<BackToBasics$Dir>.File2"
fileout$ = "<BackToBasics$Dir>.File3"
handlein% = OPENIN(filein$)
IF handlein% = 0 THEN PRINT "File ";file$;" not found.":
END
handleout% = OPENOUT(fileout$)
i%=0
WHILE NOT EOF#handlein%
 INPUT#handlein%,in$
 PRINT#handleout%,i%,in$
 i% += 1
ENDWHILE
CLOSE#handlein%
CLOSE#handleout%
*SETTYPE "<BackToBasics$Dir>.File3" TEXT
END
```



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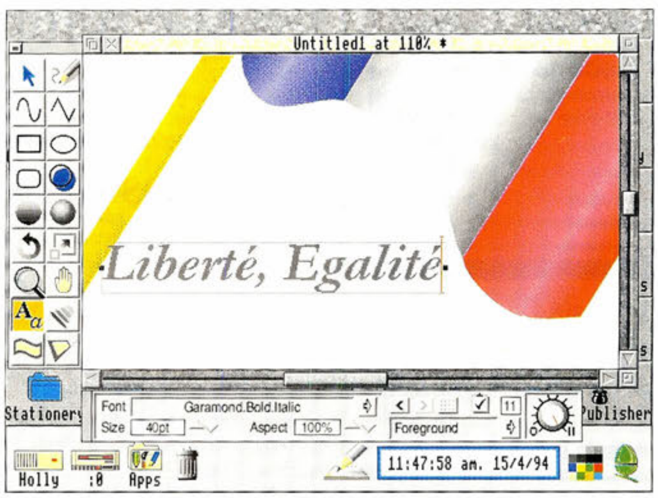
Accented characters, monitor compatability, Risc OS 3.1 upgrades and more in this month's column

QUESTIONS & ANSWERS

Q I have an A410/1 at home and use *Ovation* to write most of my letters. However, I frequently want to use accented characters – 'é' for example – and find it hard to remember the code for this character that will enable me to type it in using Alt and the numeric keypad.

It is also awkward to enter it using the *CharSel* application by picking it from a grid of other letters with the mouse. On the Mac in my office, I can use 'Opt-e, e' – why doesn't the Archimedes have such a useful utility?

Jules Benoit
London



Risc OS 3 makes entering accented characters easy

A **The solution is to upgrade to Risc OS 3, if you have not already done so. There are a number of Alt-key combinations in Risc OS 3 which were not available in Risc OS 2.**

Accented characters are produced by typing an Alt-key combination, followed by the letter to be accented. The relevant keys are all clustered around the Return key at the right of the keyboard, and Alt-key combinations are as follows:

´ (acute) – Alt [
` (grave) – Alt]
¨ (dieresis) – Alt ;
^ (circumflex) – Alt `
~ (tilde) – Alt ,
° (ring) – Alt .
¸ (cedilla) – Alt /

Naturally, these will only work if the characters actually exist in the system font. 'Alt [, c' will generate an unaccented 'c', 'ć' can only be produced by negative kerning, as there is no such character in the system font.

Other characters used in foreign languages can be produced by the following combinations (the capital versions come from Shift-Alt-key combinations):

æ & Æ – Alt a (and Shift-Alt a)
& – Alt d
ø & Ø – Alt o
& – Alt p
ß – Alt s

Regular readers should also see the *INFO pages of the January 1994 issue (No 138) where the *Accent* program allowed other symbols to be entered by combination key-presses.

Risc OS 2 users can look back further to the August 1992 issue, where the original *Accent* allowed them to enter accented characters.

Other non-keyboard characters can be produced with Alt-key combinations. Alt-Space gives a 'hard' space and Alt-hyphen a 'hard' hyphen (minus sign).

These will not be used by word processors as places to split words, as in the number081-811 8055, which will not be split over consecutive lines.

Other characters are produced as follows, including Alt-Shift combinations:

& ¡ – Alt 1 & Alt !
^{2}– Alt 2
^{3}– Alt 3
1/4– Alt 4
1/2– Alt 5
3/4– Alt 6
± – Shift-Alt 9
¶ & ® – Alt r
¥ – Shift-Alt y
§ – Shift-Alt s
ª – Shift-Alt f
« – Alt z
» – Alt x
¢ & © – Alt c
µ & º – Alt m
x – Shift Alt ,
÷ – Shift Alt .
¿ – Shift Alt ?

Alt ` (the top-left key on the keyboard) gives '¬' on most computers, but '¦' on the A4; Shift-Alt ` gives '°' on both. '¦' is Shift-Alt \ on all Risc OS 3 machines except the A4. Only the A4 will give the '¤' symbol using Shift-Alt 3.

A version of the *Key Caps* desk accessory on the Macintosh is sorely needed on the Arc....

Q I have decided to buy some hardware for my machine, which is an A5000 with 4Mb upgrade. I am interested in a Colour Card Gold from CC/Wild Vision.

However, recently in many magazines I have been hearing bad things about the AKF18 monitor – which is what I have – with references to its 'unreliability'.

Personally I have experienced no problems with mine, and don't know what the fuss is about. My only concern is that if I buy the Colour Card Gold, I could run into problems.

Would it be worth spending my money if I am going to get no, or very little, difference in graphics quality?

Gavin Jenkins
Neath

A **The Colour Card will work with the AKF18 and you will be able to take advantage of 15-bit-per-pixel modes using the monitor. The problem will come if you try to use high resolution modes, since, although it is a multisync, the AKF18 is a relatively low-resolution monitor, and high-resolution displays may look fuzzy.**

There have been a number of reliability problems with the AKF18. Using the high resolution, high frequency modes which the Colour Card can generate could reduce the life of the monitor, but if you stick to standard resolution modes you should be OK.

In these modes, the Colour Card will have two advantages. You will be able to get more colours, and the processor will not be slowed

down, resulting in a flicker-free display.

Q I have a 1991 A5000 with Risc OS 3, version 3.00. I find that some programs I try to run can only be run under Risc OS 3.1 or later. I have seen advertisements for Risc OS 3.1 for £75, but surely as I already have Risc OS 3 an upgrade to 3.1 should be less expensive.

If such an upgrade exists, where can I obtain it from and how much would it cost?

G King
Newark

A When Risc OS 3.1 was released, Acorn offered it at a low introductory price in order to encourage Risc OS 2 and 3.0 users to upgrade. The standard upgrade was made available at around £50, with a cheaper A5000 upgrade for around £25.

This was because the A5000 upgrade did not include Risc OS 3 manuals, since these would already have been bought with the computer.

At the end of October last year, the A5000 upgrade was discontinued, and the price of the standard upgrade raised from £50 to £80. Unfortunately therefore, you will now have to pay the full price for the upgrade.

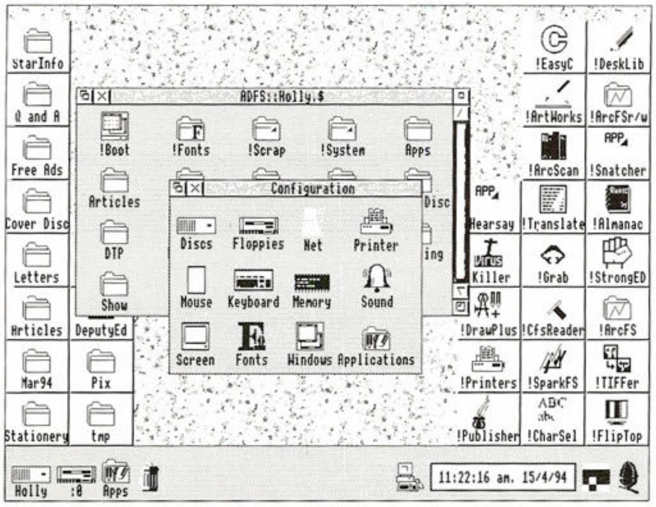
To those of you thinking that – since 3.1 was in effect a bug-free version of 3.0 – Risc OS 3.1 should have been offered free to A5000 buyers, we can only say 'You may very well think that, we could not possibly comment'.

Q I am looking for a way of using my Acorn A5000 for E-mail via Internet, and to make contact with special interest groups, my interest having been aroused by an article in *Acorn User* suggesting that Demon were the most Acorn-friendly service provider.

However, I have found that the whole procedure for the software is complex and fraught, and not at all the 'plug in and play' that I naively expected.

Can you help? In particular, where can I find Paul Allen's explanation of how to use the software mentioned in the Comms column of the April issue?

Mike Colvin
North Dulwich



Bad configuration may lead to your desktop looking off-colour

A Getting set up to use Internet and finding your way around once you are using it is difficult. We will shortly be running a feature on this subject.

In the meantime, Paul Allen's article can be found on the Arcade bulletin board, under file 033318, using *KA9Q*. Arcade is on 081-654 2212. It was originally written for The Arm Club, who very kindly allowed it to be uploaded onto bulletin boards.

Q Please help me. Whenever I start up my computer, the desktop comes up in a horrible black-and-white stippled mode instead of the usual colour one.

I can get to a colour one by using the *Palette* utility, but I would like my computer to start in a colour mode if possible, like it used to.

Joe Baker
Worcester

A There could be several reasons for this. The first suspect is the configuration of your machine. You can check this using the *Configure* application, or by typing 'status' at the command line.

The likely configuration option at fault is 'WimpMode', which sets the mode that the desktop starts up in. If this is set to a two-colour mode – and you did not set it to this – then your configuration options have become corrupted.

The most likely culprit in pre-A540 machines is a battery that needs replacing. You should change the batteries in these machines every year.

If the mode is not a two-colour mode, then it may be a mode defined in a software module on your hard disc, which for some reason isn't being loaded.

Check that you haven't recently moved or deleted any system resources. Also check that you haven't moved or deleted some other program which may automatically load in an extended mode module, such as one from CC.

If you have a boot file, try commenting out sections in it by using the '|' character at the start of each line. Concentrate especially on applications which enhance the desktop.

Pinboard-style applications like *Larger* can object if they can't find their backdrop sprite, and it can be easy to delete or move this by accident.

Q I notice that the Arm610 chip runs at 30MHz, which is not that much faster than some Arm3 chips, but slower than others. So why are we told that the desktop on the Risc PC runs twice as fast – where does the extra speed come from?

B Phillips
Moorgate

A There is more to the speed of operation of these chips than raw clock speed. The Arm3 was much faster than the Arm2, largely as a result of having an onboard 4K Ram cache which could be accessed by the processor much faster than it could read and write from main memory.

The Arm610 includes a write-back buffer and Memory Management Unit (MMU). This brings some of the functions previously handled by the MEMC chip onto the Arm processor, speeding operation up considerably.

The increase in speed is therefore due to improved design more than increased clock speed

Advice given

Nick Pearson from Ipswich, who sent us the tips about speeding up the booting of *!Fonts*, also sent us this tip about *Printers*.

The Printer Manager is quite slow to get going, but this can be improved upon a little bit in most cases.

Look inside the *Printers* application (Shift double-click) and you will see a number of directories. Mine has *dp*, *Palettes*, *PDumpers*, *ps*, and *ld* as well as the usual *!Run* and *!Sprite* files.

These are all the standard directories, except for *ld* which is for a Computer Concepts direct drive LBP8 laser printer.

On start up, the Printer Manager has a good look in all of these to see what is available. If you are only going to use a particular printer then you do not need the other directories.

Move them (Shift drag) to a new directory next to *Printers* called *PrintDirs* for safekeeping. If you have a dot matrix printer you need the *dp* directory.

PostScript devices use the *ps* directory. Most Hewlett-Packard and some Apple printers need *PDumpers* as well as *dp* or *ps*.

Most printers need the *Palettes* directory, but my laser printer doesn't. The rule of thumb is: take it out and print some shaded graphics. If you get a self-explanatory error message, you need it'.

Further thanks to Nick for that tip

Acorn Customer Hotline

Essential information for all *Acorn Users*, compiled by Dave Walker of Acorn Customer Services

Questions and answers

Following the release of *Printers 1.22* this month's top question is:

Q *Printers 1.22* asks for a new version of *ColourTrans* when I load it; I have looked in my *System.Modules* directory and can't find it.

A There is a new version of *ColourTrans* included with *Printers 1.22;* it's in *!System.310* in the *Printers* suite. Use *SysMerge* to update your master copy of *System,* and ensure that you reset the machine before running the new *Printers.*

A Typical A-Link session

This month we concentrate on file transfer between the Archimedes and the Pocket Book using A-Link. This is how a typical session goes:

1. Ensure that the Pocket Book and the Archimedes are switched off
2. Connect A-Link to Archimedes
3. Switch on Archimedes
4. Load *PocketFS* software
5. Connect A-Link to Pocket Book
6. Switch on Pocket Book
7. On Pocket Book, set the Remote Link to On
8. On Archimedes, click on *PocketFS* icon

At the end of an A-Link session, remember to dismount the A-Link correctly. The procedure below should prevent any problems with the A-Link and Pocket Book:

1. Dismount A-Link via the *PocketFS* menu
2. On the Pocket Book, set Remote Link to OFF
3. Quit *PocketFS* software
4. Switch off Pocket Book
5. Remove A-Link from Pocket Book

Note – when using the A-Link it is advisable to use a mains adaptor; communications place a heavy load on the batteries and reduce their expected lifetime. The A-Link will not work if there is less than 50K free memory on the Pocket Book.

More memory can be made available by quitting applications which are running in the background or by deleting files from the Ram disc.

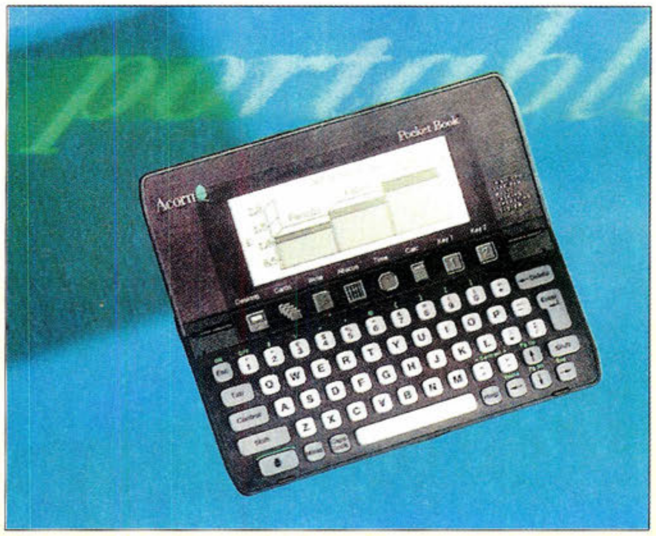
Transferring files

Although the Acorn A-Link can be used to transfer any type of file between the Archimedes and Pocket Book, the most common use of the A-Link is to transfer files to and from the applications supplied with the standard Pocket Book.

As *Write, Abacus* and *Cards* formats are not understood by Archimedes applications, it is necessary for the A-Link to convert the files into an appropriate format. The following are used:

Application Name	A-Link file format
Write	ASCII
Abacus	CSV
Cards	CSV

CSV (Comma-Separated Variable) format means that items of data are stored sequentially as a string of ASCII, with the entry for a given field separated from the entry for the adjacent field by a comma.



Files from other Pocket Book applications – such as *Schedule* – can be transferred to and from an Archimedes without performing any conversion. This is also useful for installing new Pocket Book applications distributed on floppy disc. Choose the 'Open $' option from the *PocketFS* icon bar menu, and use the filer displays as normal.

Errors reported by the A-Link

● Already opened by another process – the file you wish to transfer is currently being used by an application on the Pocket Book. To make this file available for transfer, you need to quit the application by highlighting its icon on the desktop and pressing 'Acorn-Q'. The following command will then appear:

● The A-Link can no longer find the Pocket Book – this may be the result of a bad connection between the machine and the Pocket Book. Check connections, start again and wait for the message: 'Backing up files from the Pocket Book'.

● When backing up files from the Pocket Book, it is possible that the files, when stored on an Archimedes formatted disk, will have their names truncated. This can lead to difficulty when re-installing the backed-up files.

As the structure of a PC formatted disc matches that of the Pocket Book more closely, files which are backed up to a DOS-formatted disk on the Archimedes will not be truncated. For this reason, we recommend that Pocket Book files should be backed up to DOS-formatted floppies.

Erratum: In April's Customer Hotline, the second SYS call on the right should be SYS 6,162, 188, (A% OR 1<<7). Apologies for the misprint.

Acorn Customer Services, Acorn Computers Ltd, Acorn House, Vision Park, Histon, Cambridge CB4 4AE

*INFO

Dave Lawrence and Dave Acton continue their monthly look at programs, for all Acorn Users

WorldTime plus

One of my favourite applications of all time appeared back in July 1993 – P E Marshall's *WorldTime*. This showed a map of the world as it looks at the moment, with those bits in daylight and darkness shaded accordingly and the local times in a range of cities updated each minute.

I particularly liked running it just as the sun was going down, just to confirm that all was still well with the Earth's orbit.

With the advent of Risc OS 3, Mr Marshall realised that his creation needed updating to be compatible. He explains why the new version (1.41) is needed:

'Risc OS 3 introduces the concept of territories and time zones. Under Risc OS 2 the computer clock would be set to local time, whereas under Risc OS 3 it is assumed to be set to UTC (Universal Time Co-ordinates).

'Most of the new time and date conversion SWI's now produce a result corrected to local time, as do the old ones when used in Risc OS 3.

For instance OS_ConvertStandardDateAndTime is now merely passed on to Territory_ConvertStandardDateAndTime (&4304C for short!) which adds in the local offset, ie. the configured TimeZone and BST setting.'

This is a bit of a pain when it comes to writing programs like Mr Marshall's, which ignore *our* temporal peculiarities completely. The only routine not to add in the local offset, the catchy-named Territory_ConvertTimeToUTC Ordinals, comes to the rescue.



Darnness falls and daylight breaks – all in a window

This takes in R0, the territory number (-1 for the current one), R1, a pointer to a 5-byte UTC time, and R2, a pointer to a 32-byte buffer, and fills the buffer like this::

Offset	Value
0	centiseconds
4	seconds
8	minutes
12	hours
16	day
20	month
24	year
28	day of week

For those who missed the original, there's little needed in the way of instructions. A simple menu allows you to select those display options required and the cities shown can be chosen from a list.

These are stored as data within the program and you can add a line for your own town easily in the form:

```
DATA name, lat, long, gmtdiff, ds
```

where name is text, lat and long define the position on the globe, gmtdiff is the difference from GMT in hours and ds defines what 'daylight saving' time scheme is used.

0 means none, 1 = US Daylight Saving Time, 2 = European Summer Time and 3 = British Summer Time.

One of the best features of *WorldTime* is the Step option – when clicked, time is stepped forward in amounts that can be set in days or minutes, so changes throughout the day or year can be observed.

For those few still with Risc OS 2, time zone set-up has been simplified. The computer clock is assumed to be set to local time. An option on the program menu *Local Offset* should be set to the difference between your local time and UTC. For the UK this will be 0 in winter and 1 during BST.

Under Risc OS 3, the computer real-time clock should be set to UTC with the BST flag set if appropriate (use *Set clock* in Alarm to do this). The TimeZone must also be configured correctly for where you live (0 for the UK).

Author: P E Marshall

AAsm labels

And now, a first for *Acorn User* and Info, a tip for *AAsm* (Acorn's Arm assembler). One of the main criticisms of *AAsm* is its lack of named local labels – quite often main routines need a label called 'loop' or 'skip' for example, and without local labels these would have to be written out as 'translation_loop', making the code very bulky.

It is possible to use numbered labels in conjunction with the *Rout* directive, but these are not necessarily very clear, have a clumsy notation and, quite annoyingly, cannot be passed as macro labels.

Most assemblers on other machines allow subsections of code to be labelled in some different way from normal, say prefixed with a dot, or an @. Any references to 'dotted' label would then refer to the dotted label within that section:

```
routine1
CODE
.loop  . . .
B      .loop
routine2
CODE
.loop
B      .loop
```

Having developed a number of large Arm programs, I have often wanted a means to use a system like this in *AAsm* and until now I've used a number of very unsatisfactory bodges. Nick has provided three very cunning macros that provide a way out.

On the disc you will find a file called *LocalLabel* which should be placed with your other *AAsm* header files and included in the assembly process with GET. You will also find an example file *TestProg*, and a file called *Regs* to define the register names, which demonstrates the use of the macros.

The *LocalLabel* file contains a detailed description of how to use the calls and can either be used for reference or cut down to save on space.

To use local labels in a sub-routine, include a call to the macro LocalLabels. This defines the global variable 'l' (lower case L) which is guaranteed to be unique. You can then use this like the dot in the above example. It can either be a suffix:

```
loop$l ...
B       loop$l
```

or a prefix:

```
$l.loop         . . .
B       $l.loop
```

Note the extra dot needed in this case so the assembler knows where the end of the string substitution should occur. Pick a style and stick to it. In either case, labels remain local between calls to LocalLabels.

The other two macros provided allow local labels within macro definitions. All you need to do is call the macro MacroLabels at the start of your macro and MLEND at the end (just before the MEND).For more information have a look at the example files.

Author: Nick Craig-Wood

Crossword finisher

In January of this year we brought you *Anagram*, a little wordy utility. Kell Gatherer continues the theme with an aid for crossword solvers everywhere.

The application, *XSolve* – which works with Risc OS 3 only – also makes use of the *ImpressionSpell* module: *Xsolve* will refuse to run unless the filer has already 'seen' *Impression*.

Just enter what letters you know using '?' – or any non-letter character – for the blanks and click on Start to begin the search. The current word number is shown to give you an idea of how the search is progressing and any matches are also displayed and recorded in a file.

At the end, the text file is run so the list of matches appears in an *Edit* window. The working text file is actually called *Solutions* and lies within *XSolve*. Of course if you provide a whole set of blanks, this file can get quite big, and the search can take a while.

XWord makes use of the fact that searching can be speeded if either – preferably both – of the first two letters are known. If they are both blank the search may take a little longer, because of the way dictionaries are stored.

Kell's original updated the various icons each time a new word was tried, which slowed it down a bit. We've added a couple of lines so update occurs only every 16 words.

Kell's program is properly multitasking, so you can carry on with something else while a search is going on. In fact, you could search for the solutions of several clues simultaneously while you read the rest of the paper.

A word on other things wordwise. After some requests for word-finding utilities for those without *Impression* or with other dictionaries, we are planning on providing a PD dictionary and a little application combining our anagram-finder with some crossword-solving capabilities like Kell's. We'll bring it to you as soon as we can.

Author: Kell Gatherer

More Rom Apps

Philip found our November 1992 *Register* utility 'very useful for storing applications in the *Apps* window' but points out quite validly that registering whole applications there can soak up a lot of memory.

'For example, *Printers* uses up about 190k. If you want to be able to start the application by clicking on the icon in the *Apps* window, which can be easier than hunting through various directories on your hard disc, then there is a better method.'

Philip's solution is to create a mini-version of the application which simply runs the full one. This mini-application can then be put in *Resources*. For the *Printers* example, proceed as follows:

1. Create another directory called *Printers*
2. Create an obey file with the line:

```
Filer_Run scsi::FortyMeg.$.Apps.Utils.!Printers
```

or whatever, substituting the pathname appropriate to your own hard disc structure, and save as *Run* in your new *Printers* directory.

3. Use *Register* to put the dummy application in Rom – it will create a module called *RFSmod*.
4. Delete the new *Printers*.
5. Double-click *RFSmod* (or load it in your boot sequence) – *Printers* will appear alongside *Paint* and *Edit* in *Resources:$.Apps* – double-click on it and the real application will be loaded off your hard disc.

Obviously this method requires that you don't move the original. In general, all likely candidates will have been in the same place on your hard disc for years so no problems there really.

Author: Philip Beckett

Trackmandlebrot

A month with submissions from both Jan and Jan must be good even if one of the programs is a Mandelbrot and Julia set plotter. Our normal rule about the M word applies – a program must be significantly different or faster to warrant inclusion. Jan's is both, so here it is.

The program employs a novel technique to speed up the generation of fractals. It tries to track only the path between two domains of colour. When the border of these domains is calculated the rest of the points are easily filled in. This scheme leads to significant time reduction since fewer pixels need to be calculated. In high resolution modes the speedup can especially be great.

The program supports the 256 colour modes 13, 21 and 28, and also the 16 colour modes 9, 20, 27 and 31 are supported. The control of the program is by means of the keyboard and the mouse. To perform a fractal generation each time, a key has to be pressed:

Key	Generation
M	generates a mandelbrot fractal
J	generates a julia fractal
R	redraws the initial fractal
S	prompts for a name of the screen to be saved
C & D	used to cycle the colour palette.
V	to switch on and off the video DMA, turning off means shorter generation time since no DMA overhead occurs.
N	used to switch to another screen mode
H	shows help

The mouse buttons do the following

left	zoom out
right	zoom in
middle	start generation

When you are asked to enter the number of iterations pressing Return causes 100 iterations to be selected. You can interrupt the generation by pressing Escape. The initial help can be removed by pressing Space.

When switching to Julia-generation the current mandelbrot screen is saved. When switching back with 'M' it is reloaded, so ensure that a disc is inserted when you only have a floppy-drive. Saving the screen to floppy may actually be slower than redrawing, so you should set the filing system to Ram with *Ram and make it big enough, or set the variable Save on the third line to false.

The program uses a fairly big chunk of memory on top of the system stack. This amount of memory increases with the complexity of the fractal. It is therefore advisable to allocate at least 300kb before starting the program.

Author: Jan Vlietinck

Some Risc PC notes

Now the Risc PC is generally available, we hope to see a flood of new submission to Info and probably quite a pile of revamped Vibelike demos. In the latter case we'll probably collect the whole lot together and do a Vibe/Vlietinck/Whoever special.

Until then, here's a handful of graphical orientated pointers to get you started:

Selecting a mode is no longer a case of remembering a 'magic' number, be it 13 or 31. The Basic MODE command can now be given a string (as can the desktop mode selector). This specifies the resolution, number of colours and frame rate of the mode. For example:

```
MODE "X640 Y480 C16"
```

would select a standard 16 colour VGA mode.

```
MODE "X800 Y600 C16M"
```

would select a 24-bit colour, SVGA mode (like old mode 31). 16M selects 16 million colours, 32T selects 32 thousand colours (16 bpp). Grey scale modes can also be selected using G16 or G256.

Note that when selecting a C256 mode, the palette is set up as per VIDC1 and cannot be reprogrammed. To create a completely reprogrammable palette you need to select a G256 mode.

There is a way of selecting a programmable mode *without* forcing a grey palette, but this is slightly convoluted and we'll come to this next month. An extra F parameter can be added to select a frame rate for the mode. The mode with the closest rate will be chosen.

One thing to be aware of is that Basic now uses *WimpMode to change mode for new VIDC20 modes. This means that the mode you select in Basic will be used on return to the desktop.

Selecting colours is now best done with a SWI call (although in 24bpp modes you can use GCOL RGB to choose a colour). OS_SetColour takes two parameters. The second is a colour number, the first consists of the plot action (0 = plot, 3 = EOR etc) in the bottom 4 bits.

Bit 4 selects foreground (clear) or background (set) colour. If bit 5 is set, this changes the second parameter to point to a pattern rather than a colour. Bit 6 set will change the text colour, clear the graphics colour and finally bit 6 clear will set the colour and set will read it.

Setting the whole of the 256 colour palette in one go is easiest with a call to ColourTrans. ColourTrans_WritePalette should be called with r0 set to -1, r1 set to 0 and r2 pointing to 256 BBGGRR00 words describing the palette.

If you take a look at *GCircle* or *Fire* from last month's cover disc, you'll see these three features used. We will be covering more features of the Acorn Risc PC and Risc OS 3.5 over the next months.

As soon as you have written anything for your new machine, do send it in to us for inclusion, but don't forget our usual rules about the M and J words!

We will be offering a small prize for the best programs to display the full 16-million colour palette in two categories; firstly the program that displays the most number of colours *in the most interesting way* on one *static* screen and secondly, the most colourful *swirly* one!

Useless corner

We are now taking votes in the 'Most Useless System Call' polls. If you'd like to nominate a call send it in and we'll publish the findings. To set the ball rolling, we'd like to put forward a couple of our personal favourites:

OS_Byte 241. Read/Write user flag: 'This OS_Byte accesses a location which is guaranteed to be unused by the OS. You can use this to pass results between programs'.

OS_Byte 216. Read/write length of function key string. 'This call reads and changes the count of characters left in the currently active function key definition'.

Alternatively, if you can send us a program which proves us wrong and demonstrates the shear usefulness of any the MUSCs printed we will be for ever quite grateful

Vibe trio



In his usual tradition, here is a trio of graphic demos from the Danish maestro, Jan Vibe

Tekno, which really needs an Arm3 or better to run at a decent speed, apparently simulates the background Jan saw in some video or other.

I suggest, as a quick test of your Basic programming abilities, that you run the program first and then try to work out how the effects are produced from Basic. The answer follows shortly.

Map works along the same lines as a one-liner we carried way back in, well, absolutely yonks ago anyway. It's a good deal better than the original.

The idea is that lines (be they roads, railways or something else of an urban nature) feel their way out from the centre of the screen. Occasionally they split, and the map is built up until the screen is filled.

Each tendril changes colour in stages so that when the palette is cycled, waves of colour ripple out from the middle. Jan uses SIN to set the palette to a spectrum of colours which 'wraps around' and this spectrum also shifts slowly at random, so new colours appear as time goes on.

Crop2 is an updated version of Allister Jenks original crop-circle simulator from September 1993. Jan's updated version produces a 'plaited' rather than merely 'flattened' effect – definitely more like a 'real' crop circle.

If anybody could supply us with a *Draw* file of a drunken farmhand pushing a roller then we can complete our one-line venture into praedial phenomena.

Oh yes, *Tekno*. Well, you take two sprites, one with a mask. The first you keep shifting to the right with a rectangle move plot code, while adding new coloured rectangles on the left.

The other, the one with the mask, you do likewise with, but shift it the other way. In both cases output is switched temporarily to the sprites, but you also redirect output to the mask (of the one with the mask) and then use rectangle move again to shift the whole mask up.

Circles are cut out of the mask as it goes (not using CIRCLE FILL, but a line at a time using a bit of Basic). These circles are in fact EORed. Then the two sprites are plotted on the screen, the one with the mask second.

Where a circle appears in the mask, the second image peeks through. Because of the EORing, where two circles overlap the original image comes through. Simple really.

Author: Jan Vibe

One liners

And in the one-line department this month we have:

Jellyfish

A vaguely coelenteratoid animation. This program uses the dreaded system sprite memory – and a lot of it – so you'll have to drag its allocation up to about 1300K before running. After pressing Escape, type *Snew to reclaim the memory.

Author: Robert Bergs

Friction

Another mouse type one-liner from Nick, but this one isn't quite as useful. Unlike the pointer hider utility we published a month or two ago, this one puts the pointer on ice. Literally.

Run it – you'll see what we mean. Press Alt-Q to quit, if you can't get to the task manager window...

Author: Nick Kennedy

Mouse step/time

This is a oneline desktop utility that allows the mouse step setting to be altered. Clicking on the icon with the left mouse button speeds up the mouse, the right button slows it down and the middle button removes the icon and quits the tool (as a menu was a little hard to include in one line).

Time is along similar lines (sic). A one line icon bar clock, again, a middle click over the icon will remove it.

Author: David Barrow

A String in the Tale

We first saw Jan's string in December 1991; two and a half years later he's provided us with an update:

This is an improved version of my former *string* program. Enhancements are: Better mouse control, nicer colour and, most importantly, no more vertical gaps between pixels'.

Clicking Select wipes the screen and restarts, and clicking Adjust ends the program. With the variables "prop" and "damp" in the range 0-31 you can set the propagation speed and damping of the wave.

Author: Jan Vlietinck

*QUIT

Send your contributions to *INFO, Acorn User, Europress Enterprise Ltd, Europa House, Adlington Park, Macclesfield, SK10 4NP.

Please write your name, address and program title on every disc and include a text file containing the same details.

An SAE will ensure your disc's return. Instructions on how to use your program are also welcome and any extra details about how it works or diagrams (as *Draw* files etc) will be appreciated.

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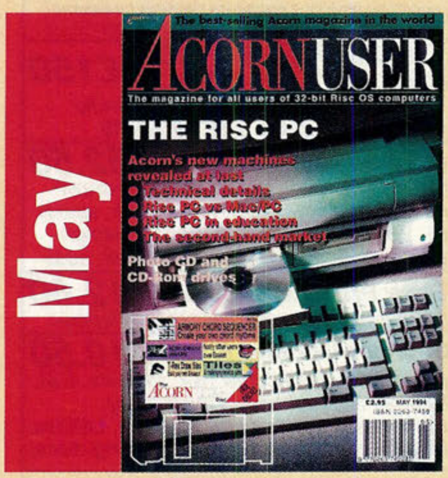
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The *Acorn User* Shareware disc contains an essential selection of the best public domain and shareware software available, all with the full permission of the authors. Just look at what you can get for your machine:

ARMcode: For all you Arm code programmers, this little application converts between Arm mnemonics and the values they have in memory.

AutoFocus: Some Wimp-based systems automatically give the input focus to the window under the pointer, which can be invaluable if you are working on two documents and keep swapping between them. With *AutoFocus*, The caret moves with the pointer.

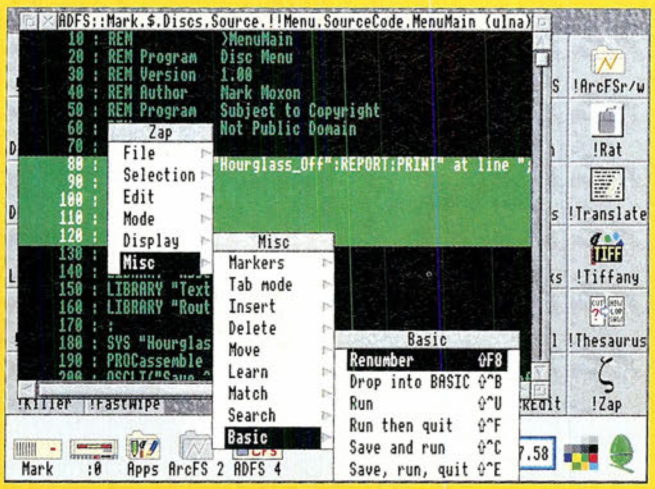
BlackHole: The best ever desktop dustbin. Use your dustbin as a way of deleting files, and if you suddenly realise you shouldn't have deleted something, you can always drag it back out of the bin.

FastBrot3: Possibly the fastest Mandelbrot set plotter for the Archimedes, this plots sets in a matter of seconds.

FileTree: This application displays the contents of discs in an easy-to-read hierarchical tree. With this type of display you can see the contents of your disc at a glance, and can search for missing files easily.

The Hacker: Contains hacks for the following games: Aldebaran, Arcade Soccer, Axis, Caverns, Spheres of Chaos, Cycloids, Elite, Fervour, Gods, Lemmings, Lotus Turbo Challenge 2, Mad Professor Mariati, Nebulus, Pacmania, Populous, Sim City, SWIV, Top Banana and Zool. Now you can cheat with confidence.

InfoScoop: Have you ever wanted to be able to point at a window, and instantly know all the gory details about it, like its window handle, its dimensions, all its window flags? Well, look no further than *InfoScoop*.



Makro: A neat little desktop application to save you typing the same text all the time.

Mode: Another handy little utility, this shows a small window containing eight numbers, which you can set up yourself. Clicking on any of these numbers changes the desktop screen mode to that number.

ModeView: This displays the mode number inside the Palette icon, so you'll always know the screen mode.

PostCalc: Calculate exactly how much it will cost you to send your packages, inland or overseas.

Process: A very comprehensive image processing packages, incorporating features found in some of the most expensive image processors in the commercial market.

PtrWrap: A simple program which makes the pointer 'wrap around' the screen: in other words, when you move the pointer off the edge of the screen, it reappears on the opposite side. Apparently, some people like the pointer to do this.

Status: If you've ever tried to write a multi-tasking program, you'll know how important it is to keep in touch with other programs in the Wimp environment. *Status* allows you to do just that, by monitoring any messages passed between applications.

WinCtrl: If you've wanted to be able to move windows without title bars, or scroll windows without scroll bars, the *WinCtrl* is for you. If you've tried to design a window in *FormEd* with no resize icon, you'll know how hard it is: but not with *WinCtrl*.

XHelp: This provides a complete hyper help system, with which you can create help files containing dynamic links to other parts of the text.

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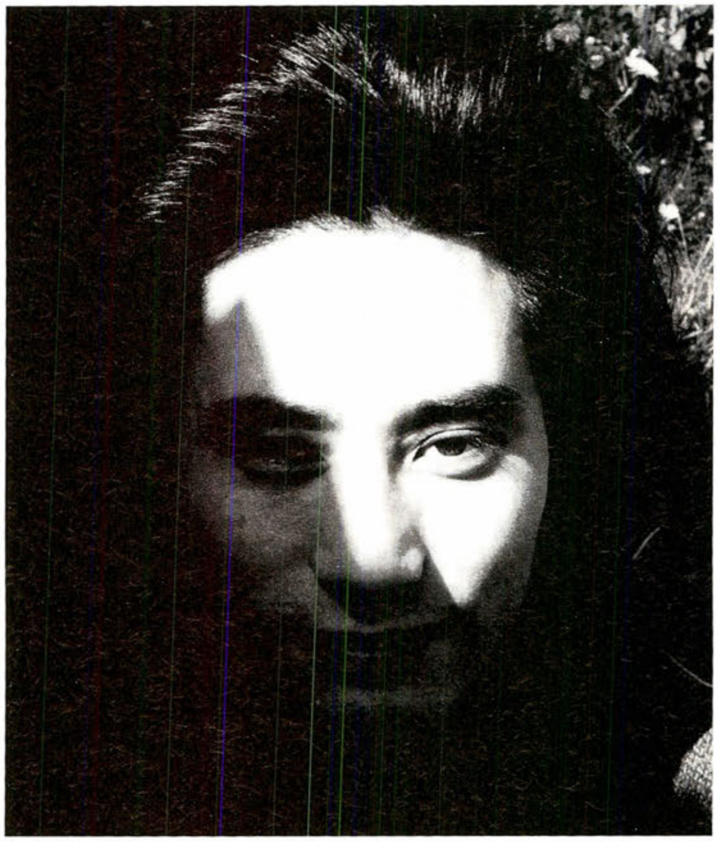
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THE MOXON INTERVIEW

ADRIAN LOOK



REEGAN

> **We're aiming to become *the* supplier of fonts on the Acorn platform**

Bowthorpe is real suburban England. Nestled unobtrusively just outside the centre of Norwich, the housing estates and landscaped lawns hide one of the up-and-coming companies in the Acorn community: LOOK Systems.

Adrian Look *is* LOOK Systems. He's the MD. He's the accountant. He's the programmer. He's the coffee maker.

If Dave Clare (see last month's interview) is typical of the Acorn generation who started with the Issue One Model B and grew with the market, then Adrian Look is part of the new breed of younger Acorn businessmen, who have never known a world without Acorn computers. Or a world with a Labour government.

The story behind LOOK Systems proves that one man's recession is another man's chance to set up his own company. After graduating in accountancy from the University of East Anglia, Adrian went to work for Norwich Computer Services, where he had been helping out during his summer holidays.

Although he only worked there for three hours a day, the experience he picked up by giving technical support to customers was invaluable.

'NCS got me used to the commercial world,' says Adrian. 'Having to answer the phone and give technical support to anyone and everyone makes you really appreciate where people have problems.'

This is what sparked off the idea of LOOK Systems. Adrian had written a few programs for NCS which had sold reasonably well, and when he left UEA, he realised he could make money out of programming himself.

And his first success, *Archimedes Disc Rescue*, was written to cater for a need he had noticed while giving technical support.

'I noticed various gaps in the market,' Adrian explains, 'one of which was the need for software to repair damaged discs. *Archimedes Disc Rescue* was a success because it had absolutely no rivals, so dealers were passing customers with faulty discs through to me; this word-of-mouth recommendation worked wonders.'

But LOOK Systems was still a small company, with Adrian working as a freelancer for NCS. The big break came when Adrian noticed another gap in the market: Acorn users had no genuine fonts from other platforms.

Until recently, The Electronic Font Foundry effectively had a monopoly on Risc OS fonts, but with the conversion of the Monotype library by LOOK Systems and the ITC library by The Datafile, this isn't the case any more.

'We're aiming to become *the* supplier of fonts on the Acorn platform,' says Adrian, 'and to do this we need to beat EFF at their own game. There are two points with fonts: design and technical accuracy.

'We're ahead on design because the fonts have been designed by a professional typographical company, and on the technical side any differences between conversions and Acorn-specific fonts are minimal.'

Indeed, Adrian says that when the representatives from Monotype visited him to talk about him buying a licence for converting their fonts, he took one of their PC fonts and converted it on his Acorn in front of their eyes.

Apparently they couldn't believe what they saw: they had never seen any of their fonts anti-aliased on screen before, and the result impressed them immensely.

But it's not just a case of bashing the Monotype fonts through a program and having a product in your hands. Nothing's that easy.

'I'm not a typographer, I'm technical,' says Adrian. 'I recognise a good design company when I see one, and I take what they've done and convert it for the Arc. The hard bit is that we have to add the hinting lines by hand.'

For 'we' read 'I': at the moment Adrian is sitting in front of his computer, adding little lines to each character in the fonts he's converting. That's about 20,000 characters in 100 fonts: not a trivial task. However, that's when the technical expertise comes in.

'I've already written a program to add hinting semi-automatically,' says Adrian, 'and I've nearly finished an almost fully-automatic hinter, enabling me to convert fonts really quickly. Apparently it's supposed to be impossible to write an automatic hinter, but I haven't found that.'

LOOK Systems' annual turnover tripled last year. It should triple again this year, if things go according to plan. So what is it that makes this suburban company such a success?

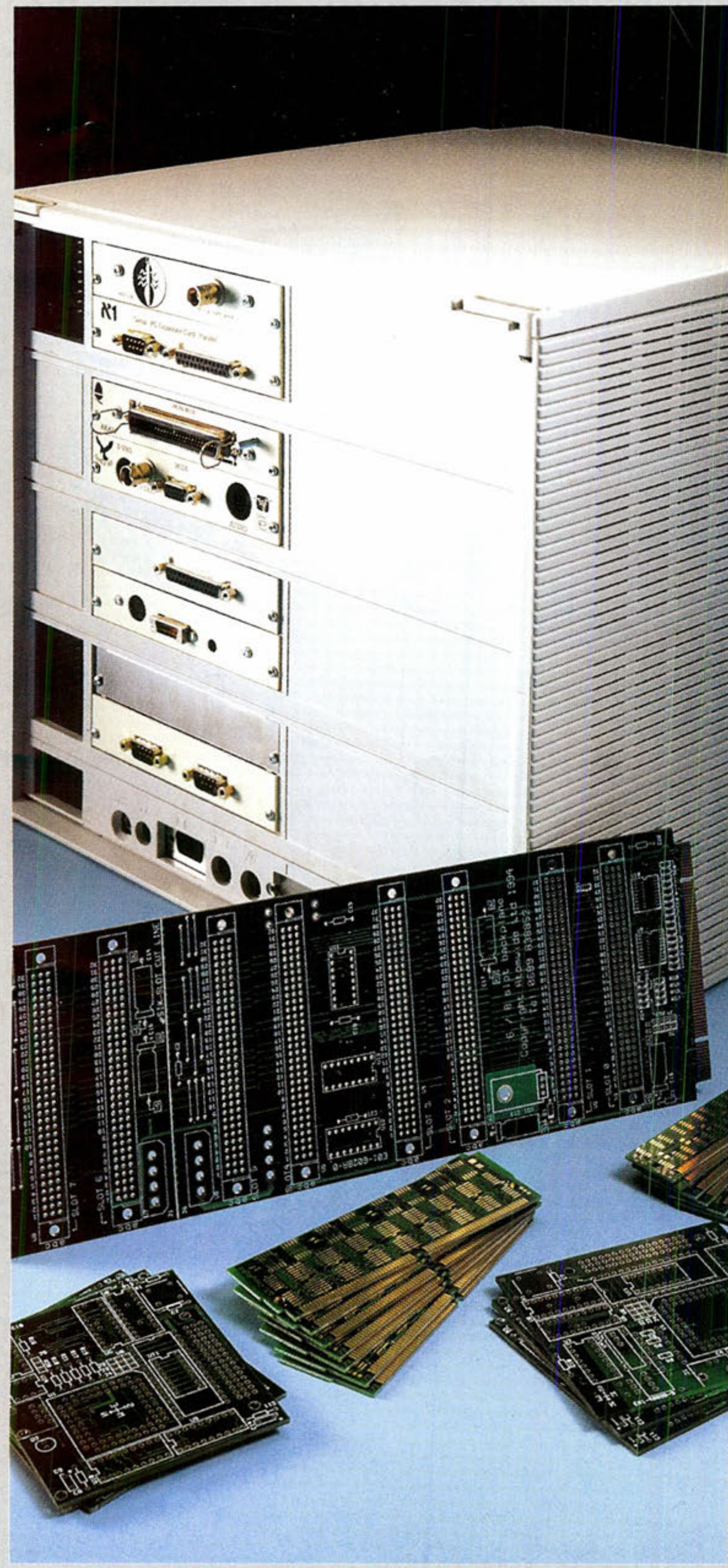
'I look at other markets, see what they have that the Acorn world doesn't have, and implement it for Risc OS,' explains Adrian.

And with that he smiles wryly, knowing that he's running his own company, his way, with his own rules, and with complete control over what happens.

Jealous, me? Never.

Mark Moxon

The Complete Solution



Acorn Risc PC600

If you are looking to improve the performance of your new PC600 machine or are considering replacing your existing Acorn file server with a new RiscPC machine, Atomwide can help you build a system that ideally suits your needs.

Networking

Atomwide can supply everything from one ANT Ethernet interface right up to a complete network installation. If you are planning a network installation then contact one of our staff for support and advice.

10base2	£110.00	(£129.25inc)
10baseT	£110.00	(£129.25inc)

ANT Ethernet cards are available for every type of Acorn machine, with a range of client ROMs (eg. Acorn Access).

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All kits come complete with a 2nd PSU, 8 slot backplane, cables, the relevant number of case slices and detailed fitting instructions.

2 slot to 8 slot	POA
4 slot to 8 slot	POA

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All Atomwide memory upgrades comply with Acorn's recommended chip counts and specifications. Please phone for details of exchange prices on memory SIMMs.

SIMMs

4Mb	£120.00	(£141.00inc)
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32Mb	£999.00	(£1173.83inc)
Larger SIMMs	POA	

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Acorn Risc PC600 machines

Custom built and standard systems are available with and without the standard Acorn monitors. Please phone for a competitive price on your system.

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7, The Metro Centre, Bridge Road,
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